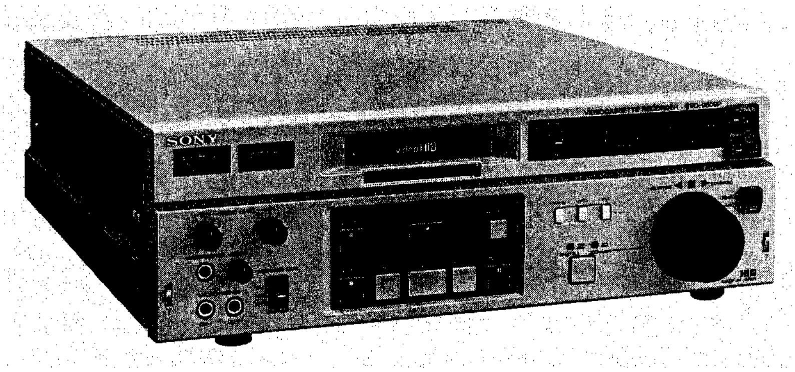
Hi8

VIDEOCASSETTE RECORDER

EVO-9800P



SONY®

SERVICE MANUAL

ADVARSEL!

Lithiumbatteri-Eksplosionsfare
Udskiftning ma kun foretages af en sagkyndig,
og som beskrevet i servicemanualen.

Litiumbatteri

Bor endast bytas av servicepersonal.
Explosinsfara vid felakting hantering.

LITHIUM BATTERY

SHOULD ONLY BE CHANGED BY TECHNICAL PARSONNEL.
THERE IS A RISK OF EXPLOSION IF HANDLED IMPROPERLY.

1-528-229-11

NOTES ON LITHIUM BATTERY

FOR SAFETY CHANGE:

- Be sure to observe the correct polarity when installing the battery.
- Do not hold the battery with Metallic Tweezers, otherwise a short curcuit may occur.

FOR SAFETY DISPOSAL:

- Do not break up the battery nor throw it into a fire which might cause it to explode.
  Carefully dispose of the used batteries.

(FOR UK ONLY)

- Wrap the battery in plastic bag and throw it in the waste bin.

FOR REPLACEMENT:

- CAUTION: Because of the risk for explosion the battery must be replaced with the same type and manufacturer.

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SECTION 1
GENERAL DISCRIPTION

1-1. FEATURES

High-quality picture in Hi8 video system

Thanks to the Hi8 video system, picture quality of 8mm video system is extremely improved. A metal tape with large magnetic energy allows high-density recording, and makes it possible to record and play back a high-quality picture.

Automatic editing system

Using the EVO-9800P, an automatic editing system can be composed together with an RM-450CE editing control unit and a VO-9850P U-matic VTR. The EVO-9800P functions as a player in this system, which allows high-quality and precise editing of the program recorded with a compact and light-weight 8 mm camcoder.

Chroma noise reducer

Thanks to a digital chroma noise reducer, a life-like color reproduction will be possible. The chroma noise reducer can also eliminate the jitter so that a stable playback picture can be obtained.

Hi-Fi sound with the AFM and PCM recording

A monaural AFM recording and two-channel PCM recording with wide dynamic range can be simultaneously executed. Cannon XLR 3-pin connectors usually used for professional audio equipment are employed for the audio inputs and outputs.

Recording and playback of the 8 mm time code

The 8mm time code can be recorded on a tape on which video and audio signals have been recorded. The 8 mm time code being played back is transferred to the RS-422A serial interface time code data, and output from the REMOTE 1 (9P) connector. Using this time code data, precise editing will be possible.

Search operation

A search dial with the shuttle and jog functions is furnished. In shuttle mode, playback pictures can be viewed at various speed from 1/30 times to 15 times normal speed in forward direction, or from 1/30 times to 13 times normal speed in reverse direction as well as in a still mode. In jog mode, playback pictures from still to ±1 time normal speed can be viewed.
As the playback can be performed in both forward and reverse directions, any desired scene can be easily found.

LED time counter

The time counter indicates the tape running time and the 8 mm time code in hours, minutes, seconds and frames by the LEDs. These are useful to check the recording time of a material and the current tape position.

Remote control

The unit is equipped with a 9-pin remote control connector. When the equipment which has a 9-pin remote connector such as an RM-450CE editing control unit, is connected here, the EVO-9800P can be remotely controlled with this unit.
When a BKU-703A 33-pin editing interface (optional) is installed in the EVO-9800P, it can be remotely controlled by the equipment with a 33-pin remote connector such as an RM-440.

Dial menu operation

With the search dial, you can change the setting values for the 8 mm time code and others.

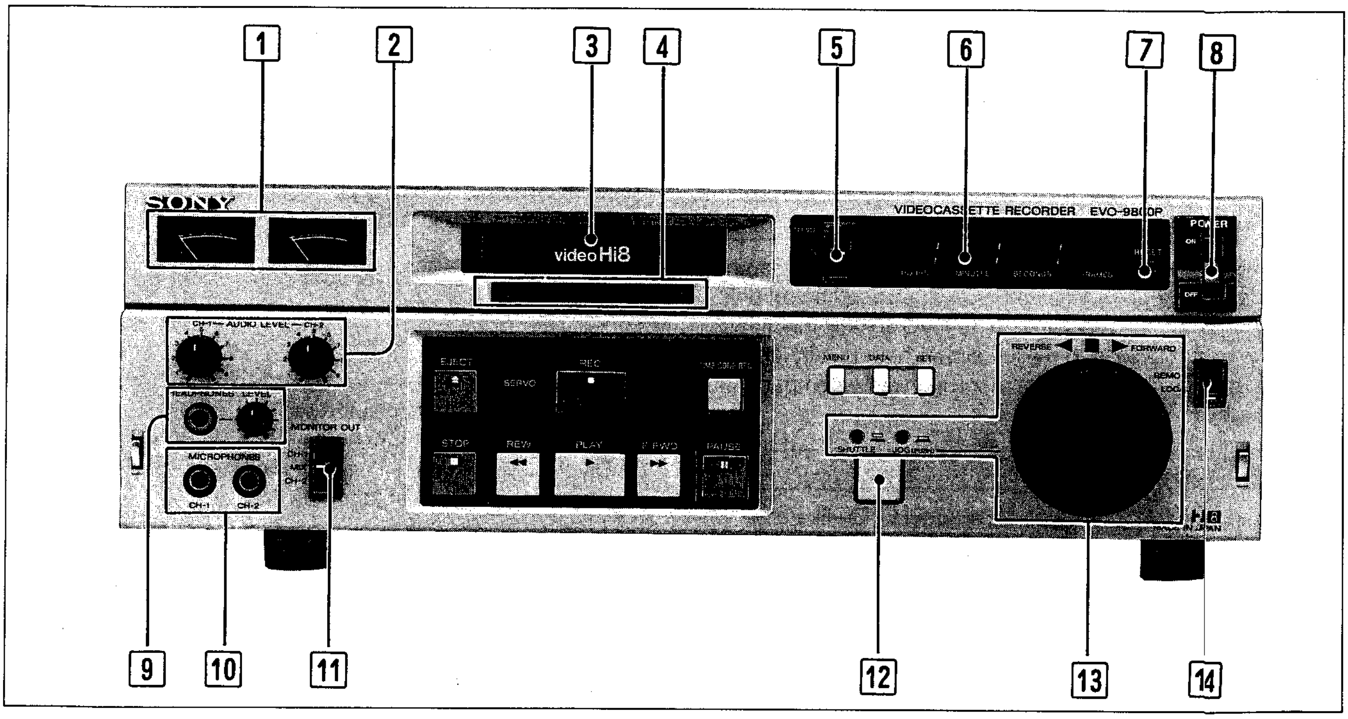
Dubbing connectors

A connector for duplicating video signals for a U-matic VTR is furnished.

S-VIDEO input and output connectors

The separated Y (luminance) and C (chrominance) signals can be fed to and from the EVO-9800P through the S-VIDEO input and output connectors, which results in high quality pictures.

1-2. LOCATION AND FUNCTION OF PARTS AND CONTROLS (FRONT PANEL)


1
2
3
4
5
6
7
8
SONY
VIDEOCASSETTE RECORDER EVO-9800P
video Hi8
POWER
AUDIO LEVEL
MONITOR OUT
MICROPHONES
CH-1
CH-2
EJECT
SERVO
REC
STOP
REW
PLAY
F.FWD
PAUSE
MENU
DATA
SET
REVERSE
FORWARD
9
10
11
12
13
14

[1] **Audio level meters**
Audio recording level is shown in recording, and audio playback level in playback.

[2] **AUDIO LEVEL controls**

[3] **Cassette compartment**

[4] **Indicator section**

📼	Lights when a cassette is in the cassette compartment.
AUTO OFF	Lights at power-on when moisture is condensed inside the unit. While this indicator is lit, a cassette cannot be loaded.
STANDBY	Lights while a tape is being threaded from or unthreaded to the cassette inside the unit.
TC	Lights when 8 mm time code is being recorded, or when the tape on which 8 mm time code is recorded is played back.
PCM	Lights when PCM sound is recorded on the tape or during PCM audio recording.
SP*	Lights when the tape speed is in SP (standard play) mode.
Hi8*	Lights when the tape is recorded in the Hi8 video system.

* The SP and Hi8 indicators will light when the power is turned on, and when a tape not recorded in SP or Hi8 mode is inserted, the corresponding indicator will go out.

[5] **COUNTER/TC/DIAL MENU selector**
Selects what is displayed in the time counter display [6] as follows.

COUNTER	Displays time period of tape travel in hours, minutes, seconds and frames.
TC	Displays 8 mm time code.
DIAL MENU	The unit goes into the dial menu operation mode and the dial menu will be displayed. In this mode, any other functions are deactivated.

Note

You can put the EVO-9800P in the dial menu operation mode with the REMOTE/LOCAL selector [14] set to LOCAL, only when a cassette is not inserted or when the unit is in the stop mode.

[6] **Time counter display**
Displays the item selected by the COUNTER/TC/DIAL MENU selector [5].

[7] RESET button

When the COUNTER/TC/DIAL MENU selector [5] is set to the COUNTER position and the time counter display [6] shows the time period of the tape travel, press to reset the time counter to 0:00:00:00.

[8] POWER switch

[9] HEADPHONES connector (stereo phone jack), HEADPHONES LEVEL control

[10] MICROPHONES CH-1 and CH-2 connectors (phone jacks)

[11] MONITOR OUT switch

Select the sound to be monitored through headphones or a speaker of a video monitor.
The sound selected by the OUTPUT SELECT switch on the subpanel is selected as follows:

CH-1	To hear the channel-1 sound only
MIX	To hear the sounds both on channels 1 and 2*
CH-2	To hear the channel-2 sound only

* When stereo headphones are used, the sound of channel 1 will be heard from the left unit and the sound of channel 2 from the right unit. When a monitor speaker connected to the MONITOR AUDIO or TV connector is used, mixing sound of both channels 1 and 2 will be heard.

[12] Search button

Press to put the unit in the search mode, and the search operation with the search dial in jog or shuttle mode will be possible.
If the setting of the dial menu number 209 is changed, the unit enters the search mode without pressing the search button.
See "Dial Menu Operation" for details.

[13] Search dial and SHUTTLE/JOG lamps

Functions as a search dial for quickly locating edit points or as a selector for the dial menu operation according to the setting of the COUNTER/TC/DIAL MENU selector [5].

Setting	Function
COUNTER or TC	Search for a scene.
DIAL MENU	Dial menu operation.

The details of the function are as follows:

Search for edit points

Set the COUNTER/TC/DIAL MENU selector [5] to COUNTER or TC, and press the search button [12]. The search dial can make the tape run in jog or shuttle mode. Push in to change from the shuttle mode to the jog mode and push it in again to change back. The corresponding lamp lights to show the current mode. Rotate the dial clockwise to run the tape forward (the ▶ FORWARD lamp lights), and counterclockwise to run the tape in reverse (the REVERSE ◀ lamp lights).
When the tape stops, the ■ lamp lights.

SHUTTLE	Set the dial to one of 16 positions to run the tape at a speed from 1/30 to 15 times normal speed in forward direction, and from 1/30 to 13 times normal speed in reverse direction. A still picture is obtained at the center detent position.
JOG	The dial turns freely. The tape runs at a speed from 0 to 1 times normal speed while the dial is rotated. When the dial is stopped, a still picture is obtained.

Note

When playback at slow speed less than 1/2 time normal speed continues for about 30 seconds in shuttle or jog mode, the playback automatically stops.

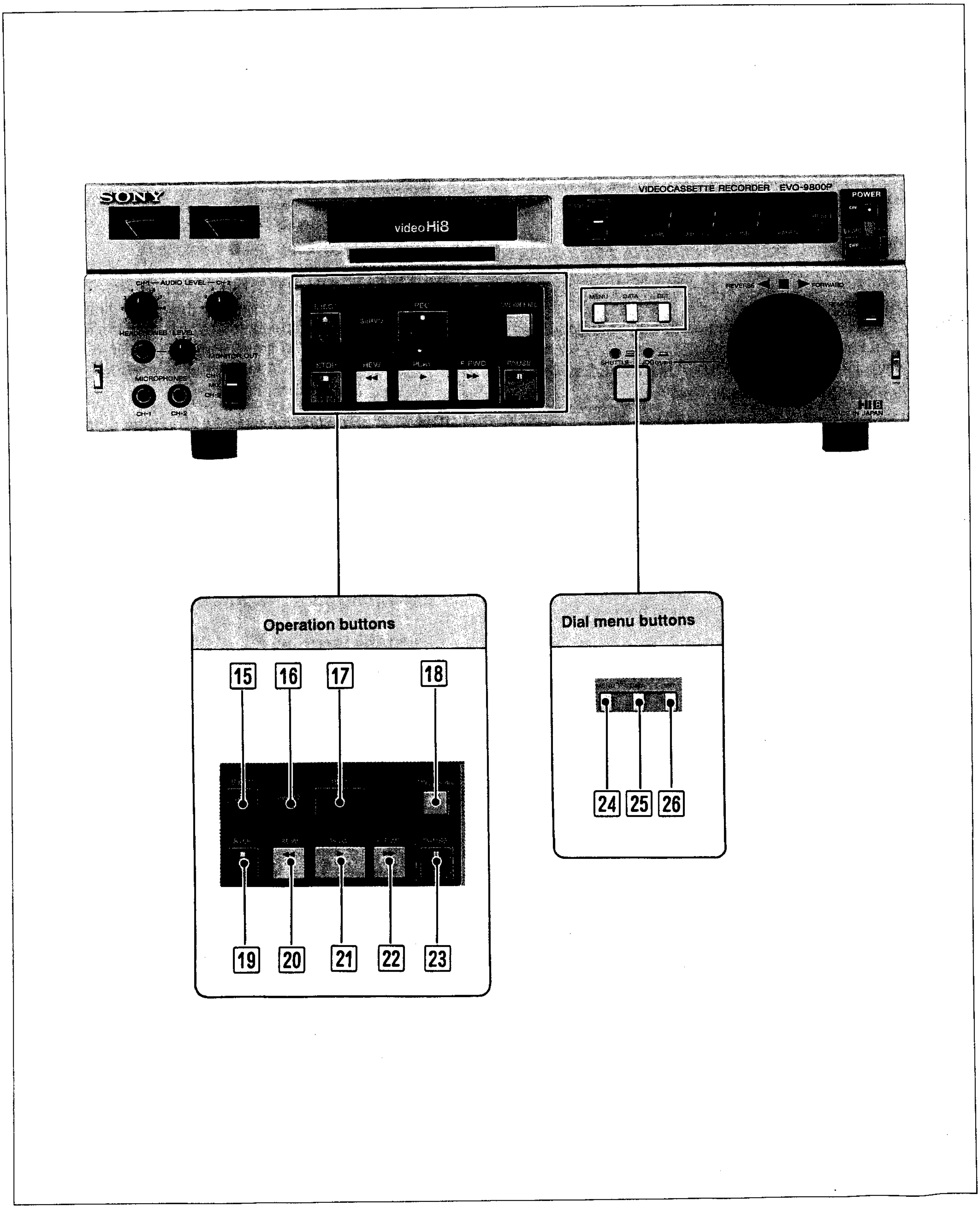
Dial menu operation

Set the COUNTER/TC/DIAL MENU selector to DIAL MENU. Rotate the dial while pressing the MENU button [24] or the DATA button [25] to set characters or numbers on the display.
See "Dial Menu Operation" for details.

[14] REMOTE/LOCAL selector

Use this selector to control this unit with other equipment connected to the REMOTE 1(9P) connector on the rear panel.
The functions are controlled as follows:

REMOTE	Set to this position when you want this unit to be controlled by the unit connected to the REMOTE 1 (9P) connector (9-pin). With this selector set to REMOTE, none of the operation buttons for tape travel, except for the STOP and EJECT buttons, will function.
LOCAL	Set to this position to operate this unit alone.


SONY
VIDEOCASSETTE RECORDER EVO-9800P
POWER
video Hi8
CH-1 AUDIO LEVEL CH-2
HEADPHONES LEVEL
MONITOR OUT
MICROPHONES
CH-1
CH-2
EJECT
SERVO
REC
STOP
REW
PLAY
F FWD
PAUSE
MENU
DATA
SET
REVERSE
FORWARD
SHUTTLE
JOG
Hi8
MADE IN JAPAN
Operation buttons
15
16
17
18
19
20
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23
Dial menu buttons
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Operation buttons

[15] **EJECT ≜ button**
Press to eject the video cassette.

[16] **SERVO lamp**
With the PLAY ► button pressed, normally the drum and capstan servo-mechanisms will start working properly. This lamp lights when the servo-mechanisms are locked in a reference signal.

Note

The SERVO lamp blinks if the servo-mechanisms are not locked in during editing.

[17] **REC ● (record) button and indicator**
For recording, press this button simultaneously with the PLAY ► button.

[18] **TIME CODE REC button**
For recording the 8 mm time code, press this button simultaneously with the PLAY ► button.

Note

While the 8 mm time code is recorded, lower part of the picture on the monitor is blanked by a black bar.

[19] **STOP ■ button**
Press to stop the operation of the unit. The E-to-E mode picture can be seen on the monitor screen.

[20] **REW ◄◄ (rewind) button and lamp**
Press to rewind the tape. The E-to-E mode picture can be seen on the monitor screen.

[21] **PLAY ► button and lamp**
Press to play the tape back. Simultaneously pressing this button with the REC ● button sets the unit in the record mode: simultaneously pressing it with the TIME CODE REC button sets the unit in the 8 mm time code recorded mode.

[22] **F FWD ►► (fast forward) button and lamp**
Press to advance the tape rapidly. The E-to-E mode picture can be seen on the monitor screen.

Note

When the tape runs by pressing the F FWD or REW button with the COUNTER/TC/DIAL MENU selector set to COUNTER, the counter indication and actual tape position may not correctly match.

E-to-E (Electric-to-Electric) mode
An input video signal which has passed through the amplifier in the recorder, is displayed on the monitor screen. This is the E-to-E mode picture, permitting the input signal to be checked on the monitor screen.
The unit automatically enters the E-to-E mode when it is set in the stop, F FWD or REW mode.

[23] **PAUSE ❚❚ button and lamp**
Press to stop the tape momentarily. To start the tape, press again. When this button is pressed during playback, a still picture will be obtained. If the PLAY ►, F FWD ►►, REW ◄◄ or search button is pressed during the pause mode, the pause mode will be released and the tape will run in the mode designated by the button pressed.

Dial menu buttons

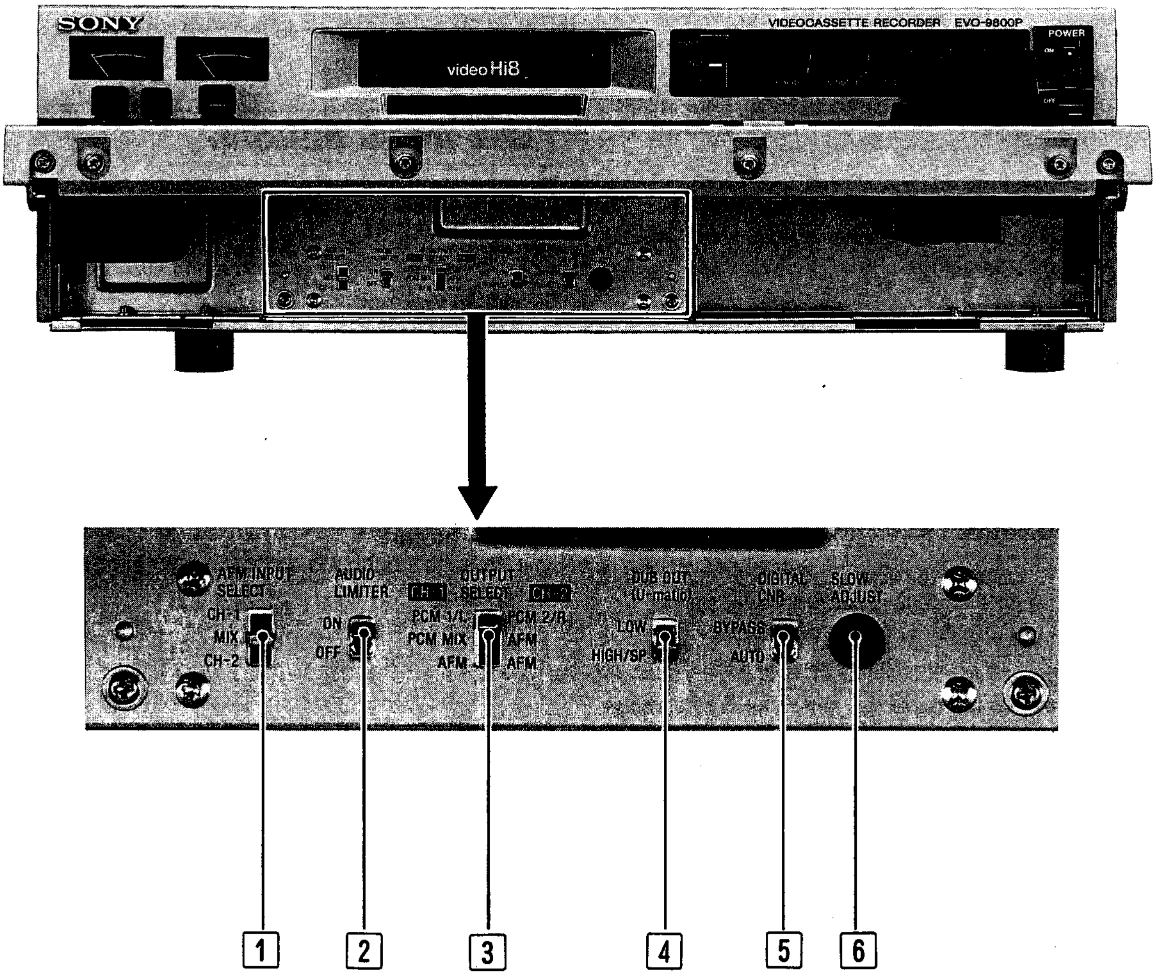
The dial menu buttons [24], [25] and [26] are used only when the COUNTER/TC/DIAL MENU selector [5] is set to DIAL MENU.

[24] **MENU button**
While pressing this button, turn the search dial [13] in jog mode to select the menu.

[25] **DATA button**
While pressing this button, turn the search dial [13] in jog mode to set the data.

[26] **SET button**
Press this button to settle the data set by the DATA button [25].

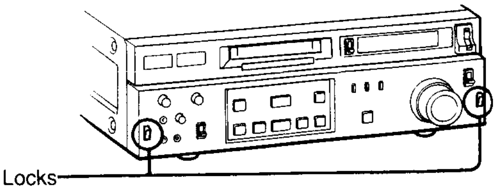
(SUB-PANEL)


SONY
VIDEOCASSETTE RECORDER EVO-9800P
POWER
video Hi8
AFM INPUT SELECT
CH-1
MIX
CH-2
AUDIO LIMITER
ON
OFF
OUTPUT SELECT
CH-1
CH-2
PCM 1/L
PCM MIX
AFM
PCM 2/R
AFM
AFM
DUB OUT (U-matic)
LOW
HIGH/SP
DIGITAL CNR
BYPASS
AUTO
SLOW ADJUST
1
2
3
4
5
6

Opening and positioning the control panel

To change the setting of the switches on the sub-panel inside the control panel, open the control panel as illustrated. The control panel can be tilted upwards by 30°, 60° or 90° for convenience.

1. Push down the locks on the both sides simultaneously so that the lower half of the front panel comes to the front.
2. Tilt the panel up and lock it at the desired angle of 30°, 60° or 90°. Be sure to check that both sides are locked firmly.



1 AFM INPUT SELECT switch

Selects the sound for AFM recording.

CH-1	To record the sound connected to the AUDIO LINE IN CH-1/L connector.
MIX	To record the mixed sound connected to the AUDIO LINE IN CH-1/L and CH-2/R connectors.
CH-2	To record the sound connected to the AUDIO LINE IN CH-2/R connector.

2 AUDIO LIMITER switch

ON	The audio recording limiter circuit is activated to minimize sudden surges of input signals and perform recording with low sound distortion. For microphone recording, use this setting.
OFF	The limiter circuit is deactivated, enabling a manual recording level adjustment.

3 OUTPUT SELECT switch

Selects the sound output from the AUDIO LINE OUT CH-1/L and CH-2/R connectors.

Setting		**Output**	
CH-1	**CH-2**	**CH-1/L connector**	**CH-2/R connector**
PCM 1/L	**PCM 2/R**	The sound recorded on the PCM channel 1	The sound recorded on the PCM channel 2
PCM MIX	**AFM**	The mixed sound recorded on the PCM channels 1 and 2	The sound recorded in AFM
AFM	**AFM**	The sound recorded in AFM	

4 DUB OUT (U-matic) selector

Sets according to the recording type of the U-matic recorder connected to the DUB OUT (U-matic) connector.

LOW	When a U-matic VTR for recording in low-band mode is connected.
HIGH/SP	When a U-matic VTR for recording in high-band mode or an SP system U-matic VTR is connected.

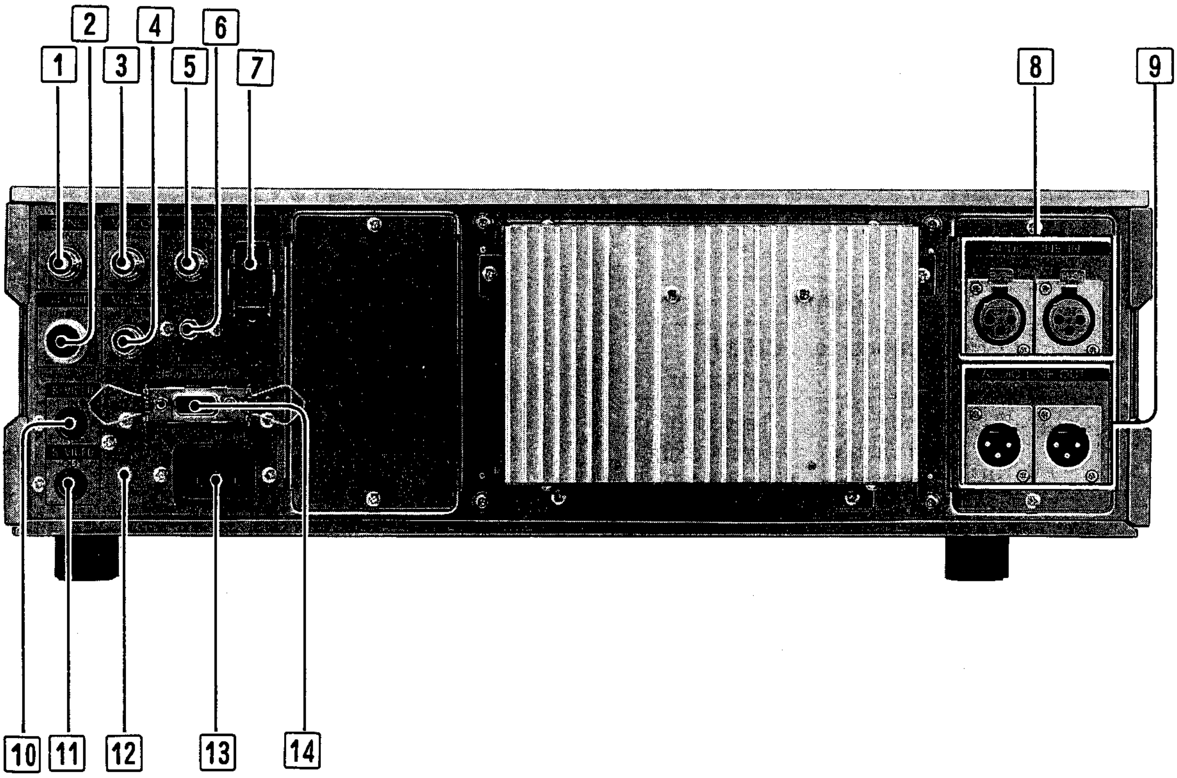
5 DIGITAL C.N.R. (Chroma Noise Reducer) switch

BYPASS	The video signal bypasses the built-in digital noise reducer.
AUTO	During playback, the video signal automatically passes the chroma noise reducer. Normally use this setting.

6 SLOW ADJUST (slow-motion picture adjustment) control

Normally keep this control at the center click position. If streaks or snow appear during slow-motion playback, turn this control so that the best possible picture is obtained.

(REAR PANEL)



1
2
3
4
5
6
7
8
9
10
11
12
13
14

1 **SYNC IN (sync signal input) connector (BNC type)**
Accepts an external reference video signal to operate the unit in synchronization with an external device.

2 **DUB OUT U-matic (dubbing output for U-matic VTR) connector (7-pin)**
Use to supply the video signal to be dubbed to a U-matic VTR. Connect to the dub input connector of the U-matic VTR using the 7-pin dubbing cable (optional).
(Be sure to set the DIGITAL C.N.R. switch to AUTO.)

3 **VIDEO IN (video input) connector (BNC type)**
Supply a composite video signal to this connector.

4 **VIDEO OUT connector (BNC type)**
Supplies a composite video signal.

5 **MONITOR VIDEO connector (BNC type)**
This outputs the video signal for monitoring. Connect to the video input connector of a color monitor. Information superimposed on a picture in the dial menu operation mode will also be output.

6 **MONITOR AUDIO connector (phono jack)**
Supplies an audio signal selected by the MONITOR OUT switch on the front panel.

7 **MONITOR TV connector (8-pin connector)**
Accepts a video monitor having an 8-pin VTR connector. Both the MONITOR VIDEO, and MONITOR AUDIO connections can be replaced with a single cable connection here. In playback, the channel selected by the MONITOR OUT switch will be heard through the speaker on the video monitor.
- The data of the dial menu is superimposed on the video signal and output.

8 **AUDIO LINE IN CH-1/L and CH-2/R connectors (XLR 3-pin, female)**

9 **AUDIO LINE OUT CH-1/L and CH-2/R connectors (XLR 3-pin, male)**

10 **S-VIDEO IN connector (4-pin)**
Supply an S-VIDEO signal to this connector. When the 4-pin connector is inserted here, the signal supplied to this connector has priority over the signal connected to the VIDEO IN connector (BNC type).

11 **S-VIDEO OUT connector (4-pin)**
Supplies an S-VIDEO signal.

12 **Ground terminal**

13 **AC IN (power inlet)**
Plug in the supplied AC power cord to supply power to the EVO-9800P.

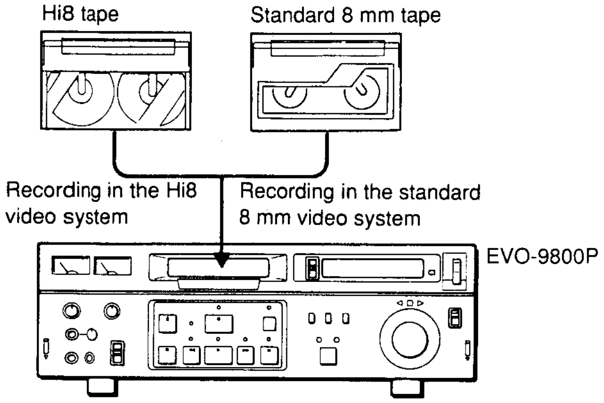
14 **REMOTE 1 (9P) connector (9-pin)**
Connect a Sony editing control unit such as an RM-450CE to perform editing.
Use the 9-pin remote control cable (optional) to make the connection.

1-3. NOTES ON VIDEO CASSETTE

Cassette Tape Being Used and Automatic Switching

• recording mode

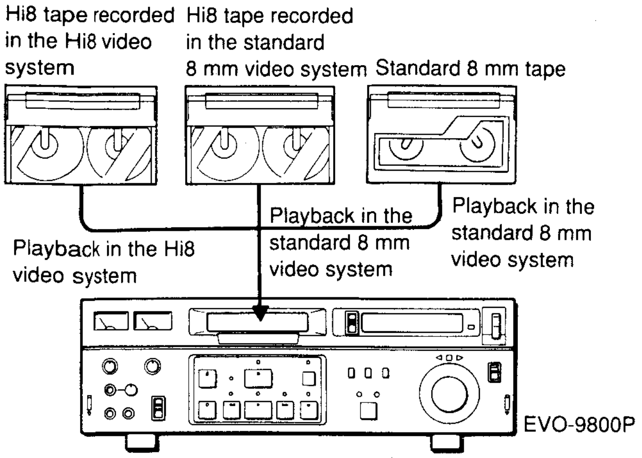
When using a Hi8 cassette tape for recording, the VTR senses the detection holes on the cassette shell (see below), and automatically performs the recording in the SP (stantard play) mode of Hi8 video system.
When using a standard 8 mm tape, the recording is performed in the standard 8 mm video system.


Hi8 tape
Standard 8 mm tape
Recording in the Hi8 video system
Recording in the standard 8 mm video system
EVO-9800P

• playback mode

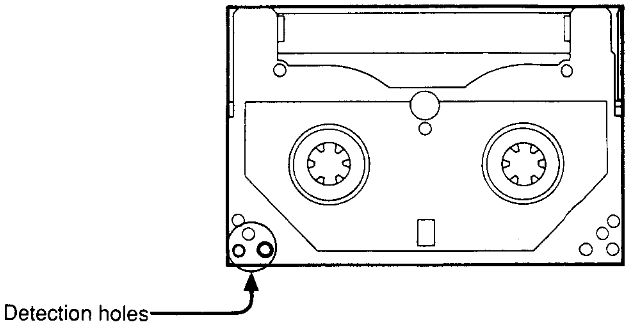
In playback, the VTR can detect the system mode used in recording by verifying the recorded signal, and plays back the tape in the appropriate mode.

- The Hi8 indicator on the front panel lights when a tape recorded in the Hi8 video system is played back.

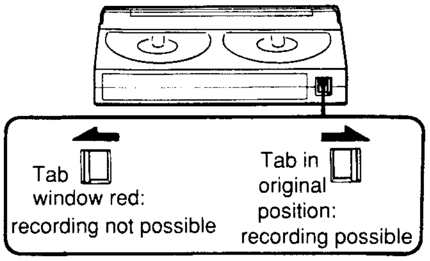

Hi8 tape recorded in the Hi8 video system
Hi8 tape recorded in the standard 8 mm video system
Standard 8 mm tape
Playback in the Hi8 video system
Playback in the standard 8 mm video system
Playback in the standard 8 mm video system
EVO-9800P

Hi8 Cassette Tape

This new Hi8 tape with high durability was specially developed for Hi8 video system recording/playback and features characteristics best suiting the Hi8 video system. Hi8 cassettes have a detection hole on the bottom of the cassette shell to automatically set Hi8 VTRs in the Hi8 video system recording.

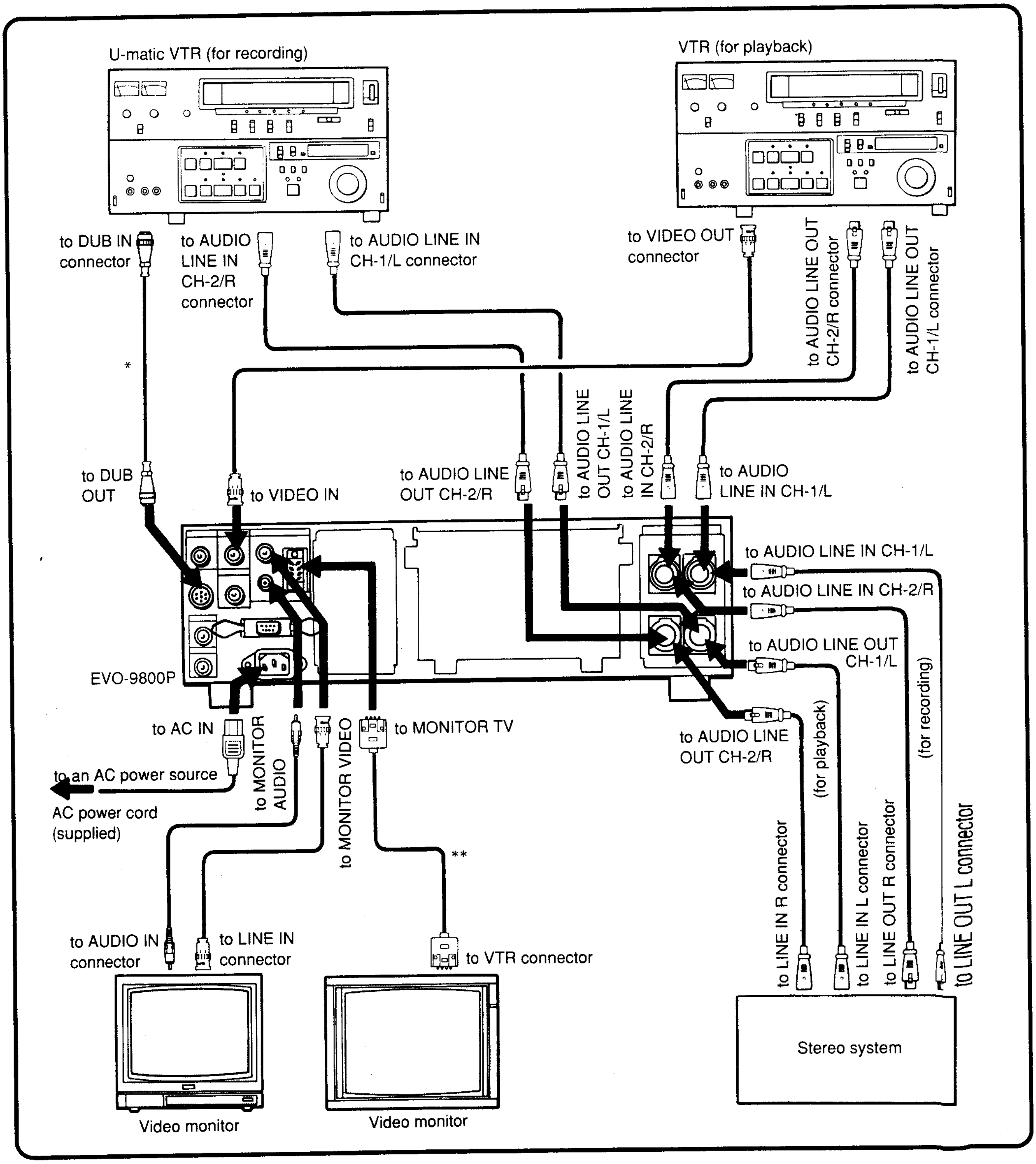

Detection holes

Record prevent Tab


Tab window red: recording not possible
Tab in original position: recording possible

1-4. CONNECTIONS

1-4-1. Basic Connections

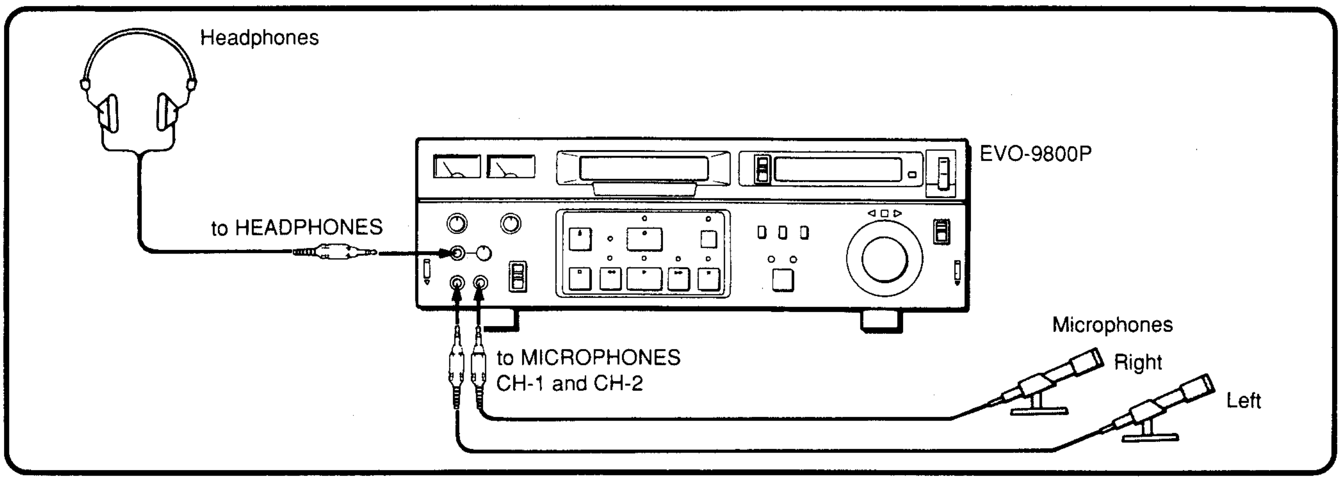

U-matic VTR (for recording)
VTR (for playback)
to DUB IN connector
to AUDIO LINE IN CH-2/R connector
to AUDIO LINE IN CH-1/L connector
to VIDEO OUT connector
to AUDIO LINE OUT CH-2/R connector
to AUDIO LINE OUT CH-1/L connector
*
to DUB OUT
to VIDEO IN
to AUDIO LINE OUT CH-2/R
to AUDIO LINE OUT CH-1/L
to AUDIO LINE IN CH-2/R
to AUDIO LINE IN CH-1/L
to AUDIO LINE IN CH-1/L
to AUDIO LINE IN CH-2/R
to AUDIO LINE OUT CH-1/L
to AUDIO LINE OUT CH-2/R
EVO-9800P
to AC IN
to an AC power source
AC power cord (supplied)
to MONITOR AUDIO
to MONITOR VIDEO
to MONITOR TV
**
(for playback)
(for recording)
to AUDIO IN connector
to LINE IN connector
to VTR connector
to LINE IN R connector
to LINE IN L connector
to LINE OUT R connector
to LINE OUT L connector
Video monitor
Video monitor
Stereo system

---

* Dubbing cable VDC-5. When the VTR is not equipped with the DUB connector, use the VIDEO OUT connector on the EVO-9800P for connecting a video output signal using a cable with BNC connectors.

** Use a VMC-3P, VMC-5P or VMC-10P monitor connecting cable.

1-4-2. Connections of Headphones and Microphones


Headphones
EVO-9800P
to HEADPHONES
Microphones
Right
Left
to MICROPHONES
CH-1 and CH-2

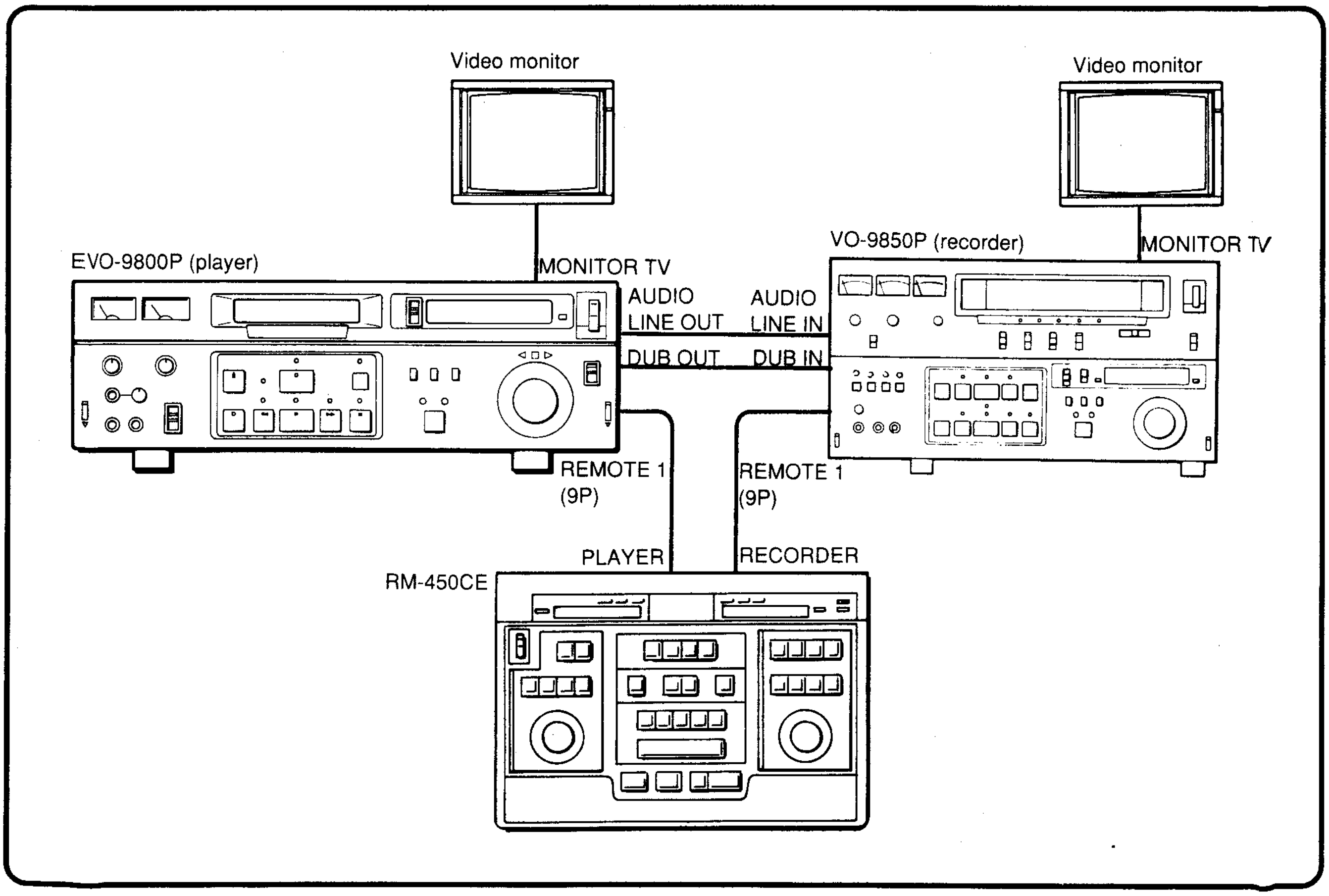
Note

When the microphones are connected, the signals connected to the AUDIO LINE IN connectors on the rear panel are automatically cut off, and signals from the microphones will be recorded.

1-5. EDITING

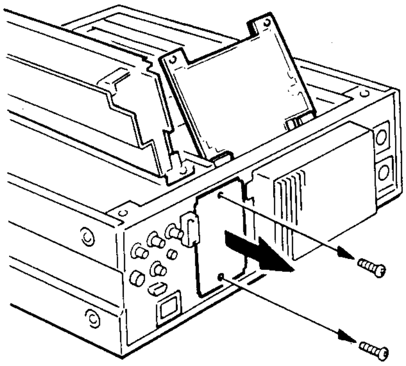
The EVO-9800P can be used as a player of an automatic editing system composed of the editing control unit, U-matic VTR for recording, video monitors, etc. Then the program recorded by a video camcoder can be edited.

An example of an editing system is introduced here. For details on connections and operations, refer to the instruction manual supplied to the editing control unit or VTR.

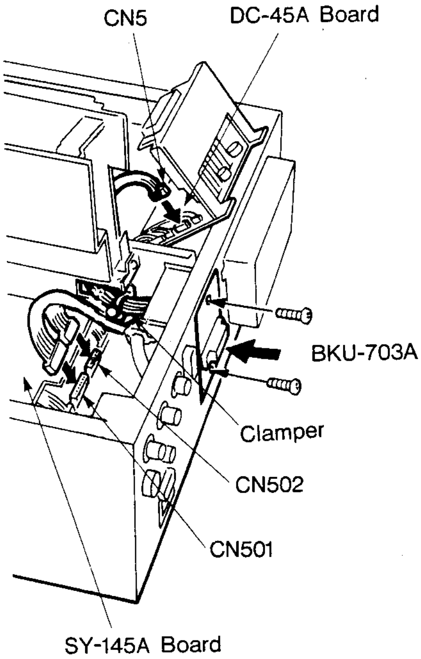

Video monitor
Video monitor
EVO-9800P (player)
MONITOR TV
AUDIO
LINE OUT
AUDIO
LINE IN
DUB OUT
DUB IN
VO-9850P (recorder)
MONITOR TV
REMOTE 1
(9P)
REMOTE 1
(9P)
PLAYER
RECORDER
RM-450CE

1-6. INSTALLATION OF BKU-703A (33P) EDITING INTERFACE

Remove the Blank Panel as shown in the figure.



Install the BKU-703A as shown in the figure.


CN5
DC-45A Board
BKU-703A
Clamper
CN502
CN501
SY-145A Board

About details, please refer to operation manual of BKU-703A.

1-7. RACK MOUNTING

The RMM-980 (option) is prepared for mounting the EVO-9800P in a rack.

SECTION 2
SERVICE INFORMATION

2-1. REMOVAL AND INSTALLATION OF THE CABINET

Front Panel

1. Remove the Top Panel and Side Panels. Remove the four fixing screws.
2. Remove the Front Panel, while releaseing the each claw of the left and right side. (fig.1)
3. When installing the Front Panel, press it in the direction of the arrows and put the two grooves of the Front Panel to the shafts as shown in the figure.

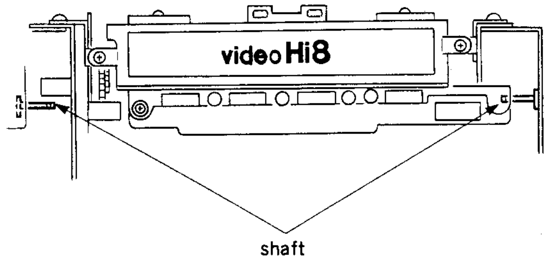


Fig. 2

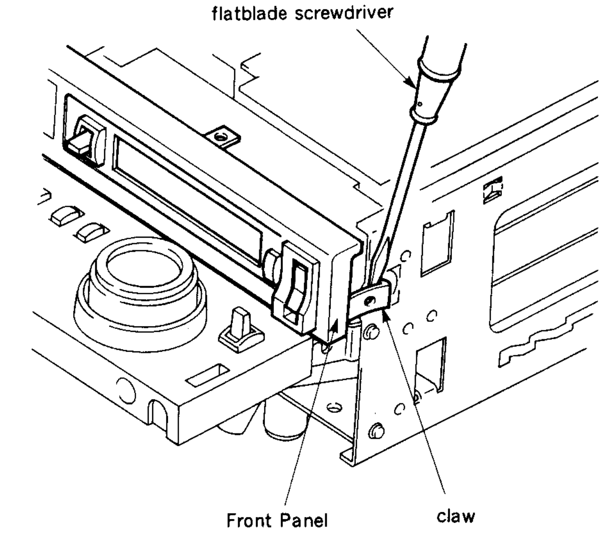


Fig. 1

Key Panel

1. While pushing down the right and left levers on the front of the Key Panel, open the panel at a 90 degrees angle.
2. Remove the Dial Knob from the Key Panel. (fig.3)
   (1) Remove the Dial Knob Rubber and the Knob Plate from the Dial Knob.
   (2) Remove the fixing screw and remove the Dial Knob from the Key Panel.
3. Remove the three Control Knobs from the Key Panel.
4. Remove the four fixing screws. Reverse the Key Panel at a 30 degrees angle and remove it from the unit.
5. When installing the Key Panel, press it in the direction of the arrows and put the two grooves of the Front Panel into the shafts of the Key Panel Chassis.

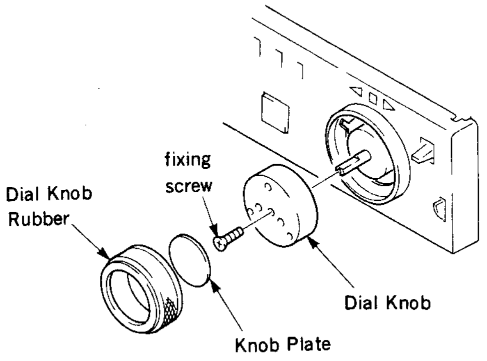


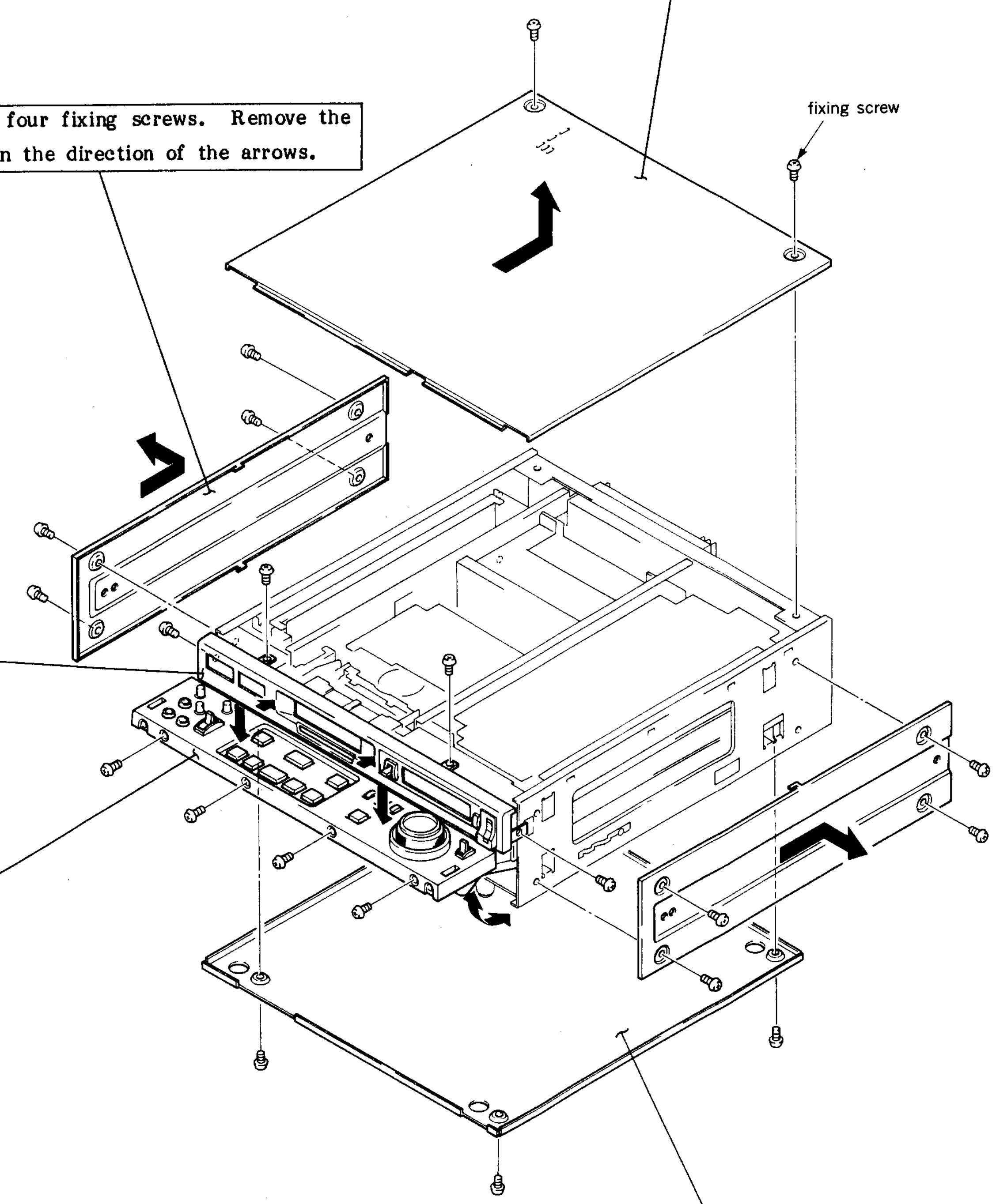
Fig. 3

Top Panel

Remove the two fixing screws. Remove the Top Panel in the direction of the arrows.

Side Panel

Remove the four fixing screws. Remove the Side Panel in the direction of the arrows.

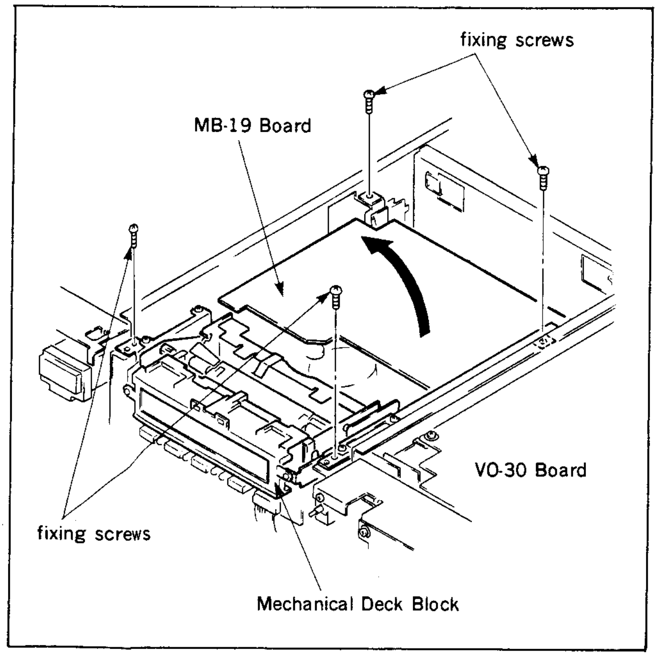


Bottom Plate

Remove the four fixing screws and remove the Bottom Plate.

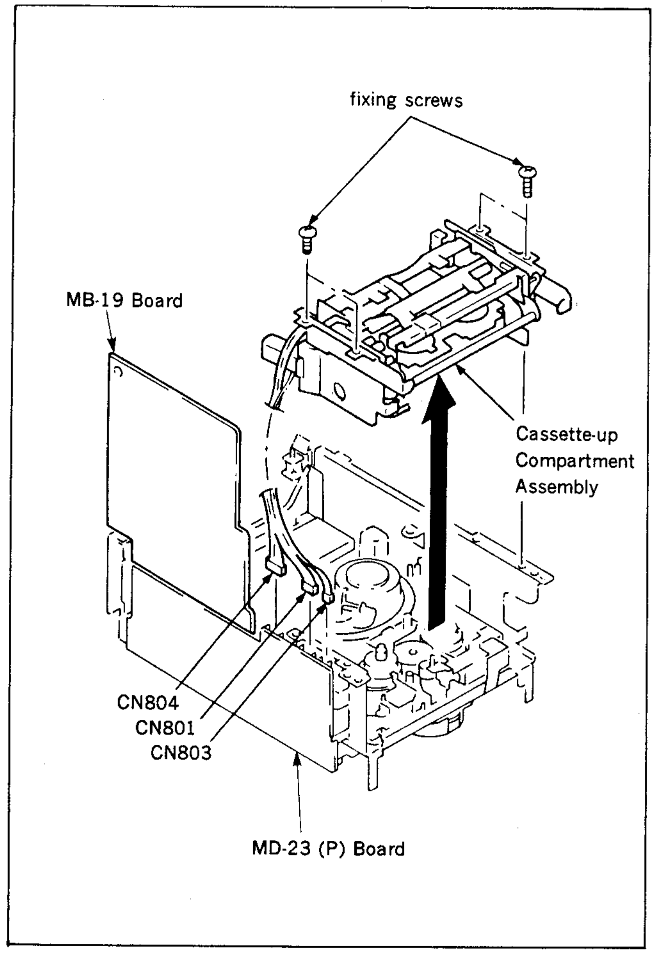
2-2. REMOVAL OF THE MECHA DECK BLOCK

1. Disconnect the connectors (CN902, 903, 904) on the SE-10(P) Board from the bottom side of the unit.
2. Remove the two fixing screws from the top of the unit. Release the claw of the PC holder and open the MB-19 Board.
3. Disconnect the connectors (CN911, 912, 913) on the HK-5 Board and the connectors (CN905, 907) on the SE-10(P) Board.
4. Disconnect the connectors (CN923, 924) on the MB-19 Board.
5. Open the VO-30 Board and disconnect the CN555 (Condensation Senser) on the DI-12 Board.
6. Remove the four fixing screws as shown in the figure and remove the Mechanical Deck Block from the unit.


fixing screws
MB-19 Board
VO-30 Board
fixing screws
Mechanical Deck Block

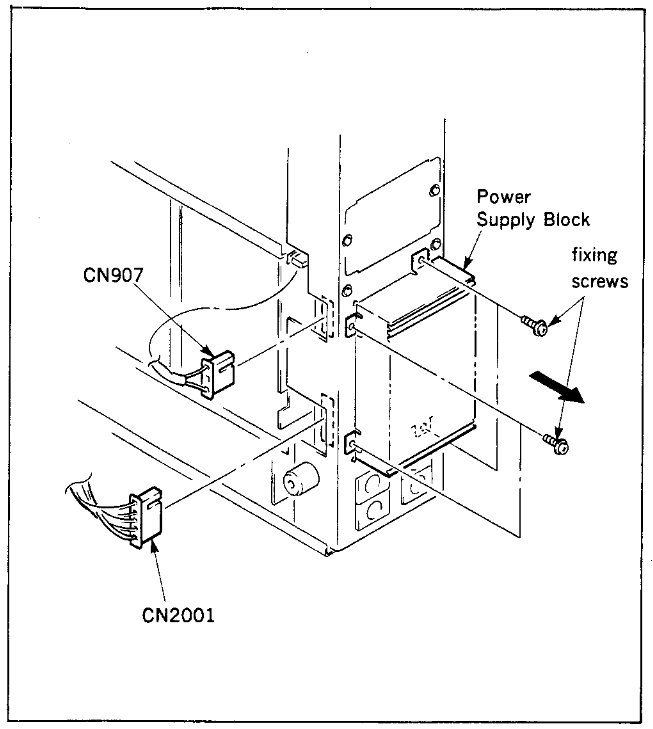
2-3. REMOVAL OF THE CASSETTE-UP COMPARTMENT ASSEMBLY

1. Remove the two fixing screws. Release the claw of the PC holder and open the MB-19 Board.
2. Disconnect the connectors (CN801, 803, 804) on the MD-23(P) Board.
3. Remove the four fixing screws and remove the Cassette-up Compartment Assembly in the direction of the arrow.


fixing screws
MB-19 Board
Cassette-up
Compartment
Assembly
CN804
CN801
CN803
MD-23 (P) Board

2-4. REMOVAL OF THE POWER SUPPLY BLOCK

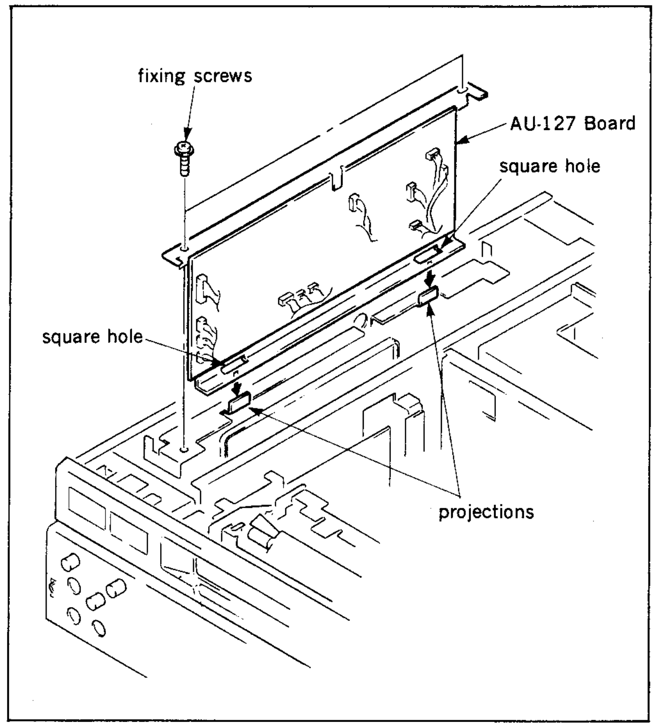
1. Remove the Bottom Plate.
2. Disconnect the connector (CN907) of the Power Switch.
3. Disconnect the connector (CN2001) of the DC-45A Board.
4. Remove the four fixing screws and remove the Power Supply Block from the unit.


Power
Supply Block
fixing
screws
CN907
CN2001

2-5. SERVICE OF THE PRINTED CIRCUIT BOARDS

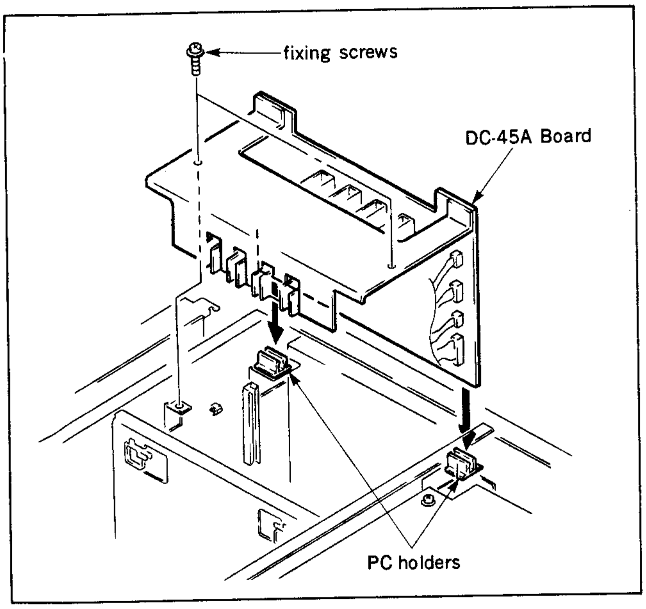
2-5-1. Servicing the AU-127 Board

1. Remove the two fixing screws as shown in the figure and pull out the AU-127 Board from the unit.
2. Insert the two square holes into the two projections of the chassis and stand the AU-127 Board.


fixing screws
AU-127 Board
square hole
square hole
projections

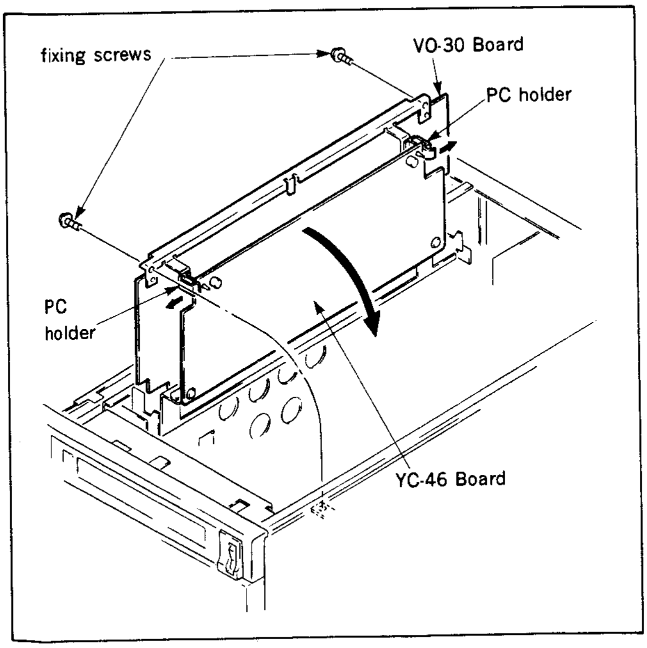
2-5-2. Servicing the DC-45A Board

1. Remove the two fixing screws and pull out the DC-45A Board from the unit as shown in the figure.
2. Insert the DC-45A Board into the two PC holders and stand it.


fixing screws
DC-45A Board
PC holders

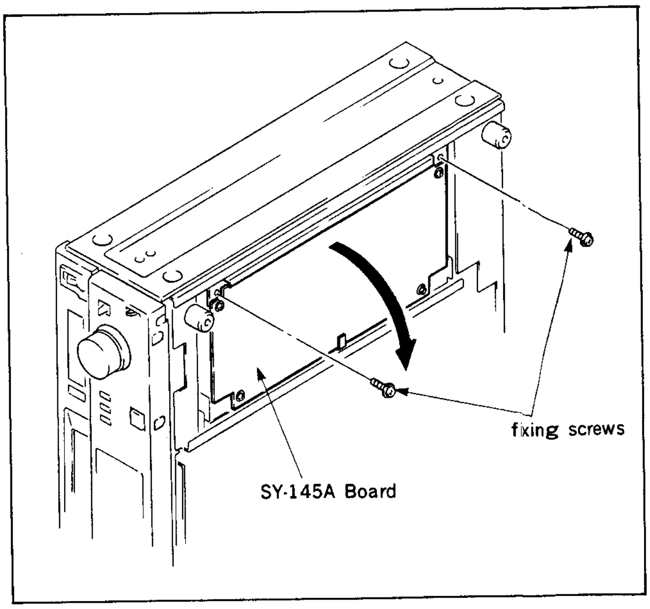
2-5-3. Opening the VO-30 and YC-46 Boards

1. Remove the two fixing screws and open the VO-30 Board.
2. Release the two claws of the PC holder and open the YC-46 Board.


fixing screws
VO-30 Board
PC holder
PC holder
YC-46 Board

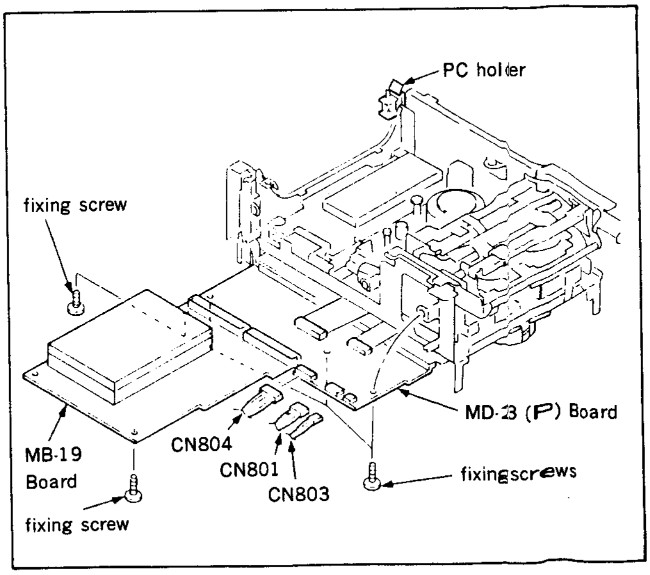
2-5-4. Opening the SY-145A Board

1. Place the unit on the left side down. Remove the Bottom Plate.
2. Remove the two fixing screws and open the SY-145A Board as shown in the figure.


fixing screws
SY-145A Board

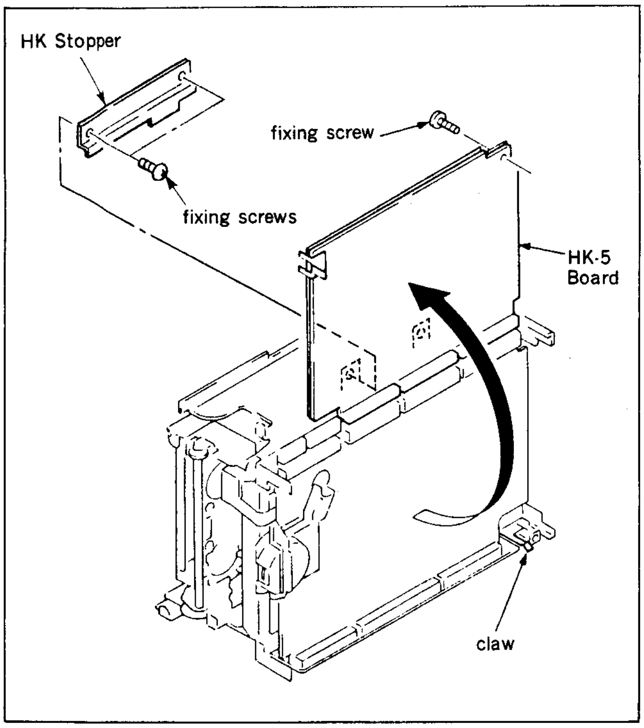
2-5-5. Opening the MB-19 and MD-23(P) Boards

1. Remove the two fixing screws. Release the claw of the PC holder and open the MB-19 Board.
2. Disconnect the connectors (CN801, 803, 804) on the MD-23(P) Board.
3. Remove the three fixing screws and open the MD-23(P) Board.


PC holder
fixing screw
MD-23 (P) Board
CN804
CN801
CN803
fixing screws
MB-19 Board
fixing screw

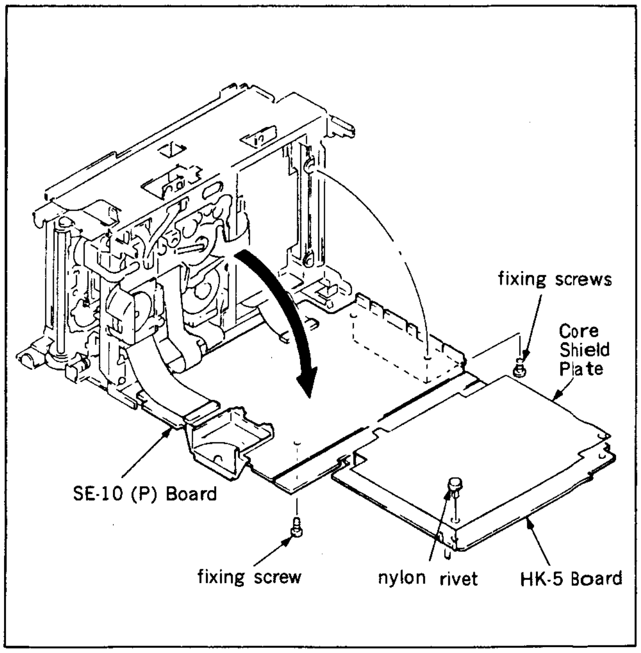
2-5-6. Opening the HK-5 Board

1. Remove the two fixing screws and remove the HK Stopper.
2. Remove the fixing screw of the HK-5 Board.
3. Release the claw as shown in the figure and open the HK-5 Board in the direction of the arrow.


HK Stopper
fixing screw
fixing screws
HK-5 Board
claw

2-5-7. Opening the SE-10(P) Board

1. Open the HK-5 Board as described in Section 2-5-6.
2. Remove the nylon rivet and remove the Core Shield Plate.
3. Remove the three fixing screws of the SE-10(P) Board.
4. Open the SE-10(P) Board in the direction of the arrow.


fixing screws
Core Shield Plate
SE-10 (P) Board
fixing screw
nylon rivet
HK-5 Board

2-5-8. Removal of the RS-31 Board

1. Disconnect the FP-122 Flexible Board.
2. Disconnect the FP-206 Flexible Board.
3. Remove the two fixing screws of the Reel Motor Assembly.
4. Insert a flatblade screwdriver into "A". Disconnect protrusion "B".
5. Remove the Reel Motor Ass'y in the direction of the arrow. (fig. 1)
6. Disconnect the connector (CN302) on the RS-31 Board.
7. Disconnect the two connectors (MS-4 Board, red), (LS-9 Board, white).
8. Disconnect the Flat Cable from the connector (CN012) on the SE-10(P) Board. (fig. 2)
9. Disconnect the connector (CN301) on the RS-31 Board.
10. Remove the fixing screw of the RS-31 Board.
11. Remove the RS-31 Board and RS Insulator. (fig. 3)

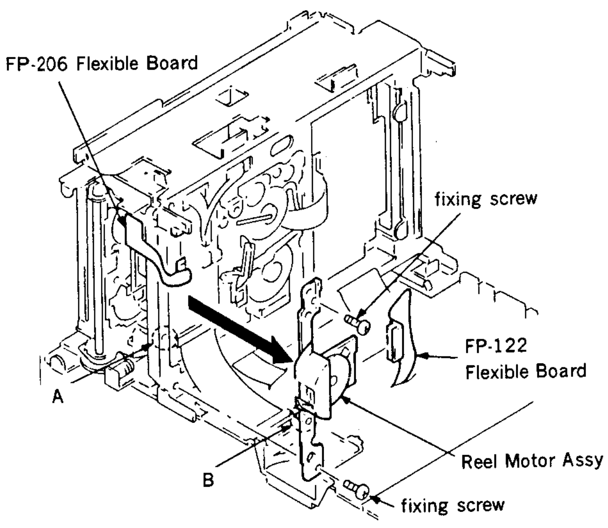

FP-206 Flexible Board
fixing screw
FP-122
Flexible Board
A
B
Reel Motor Assy
fixing screw

Fig. 1

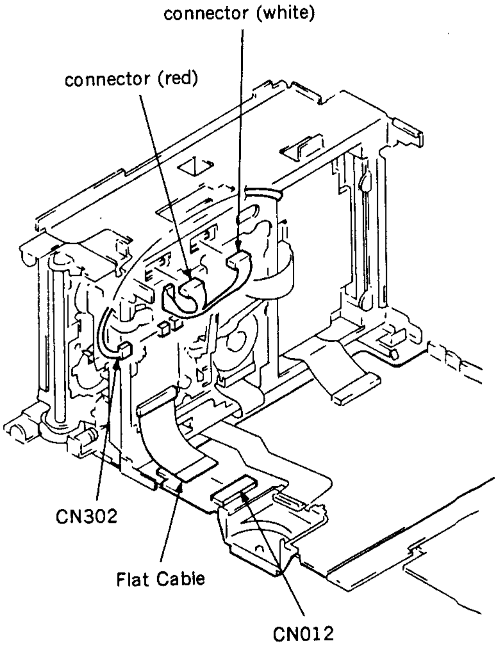

connector (white)
connector (red)
CN302
Flat Cable
CN012

Fig. 2

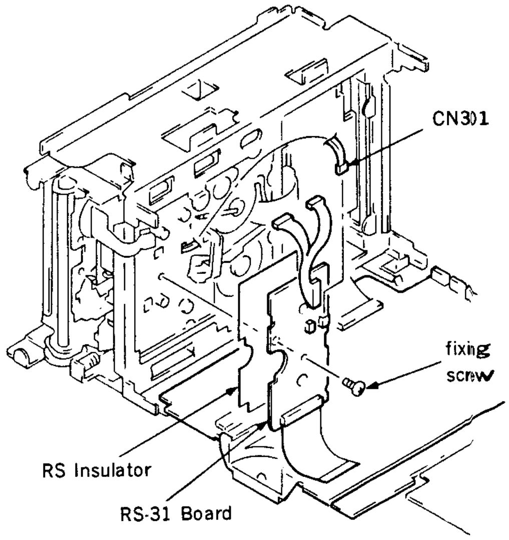
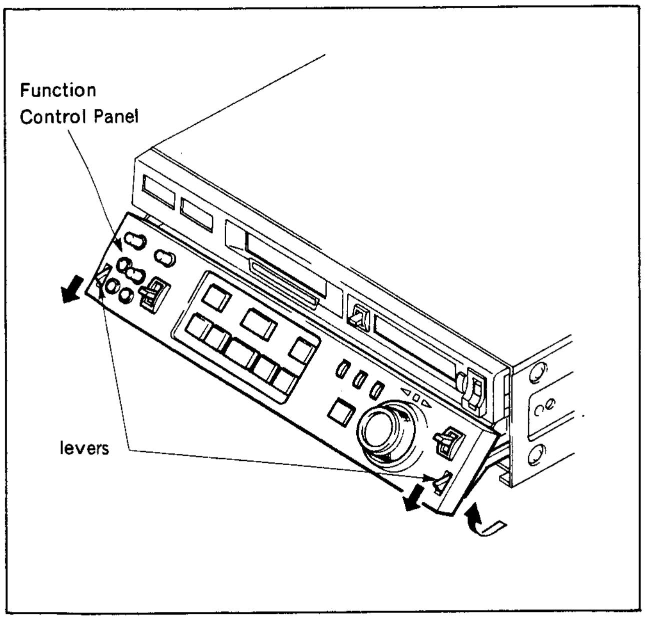

CN301
fixing
screw
RS Insulator
RS-31 Board

Fig. 3

2-6. FUNCTION CONTROL PANEL POSITIONING

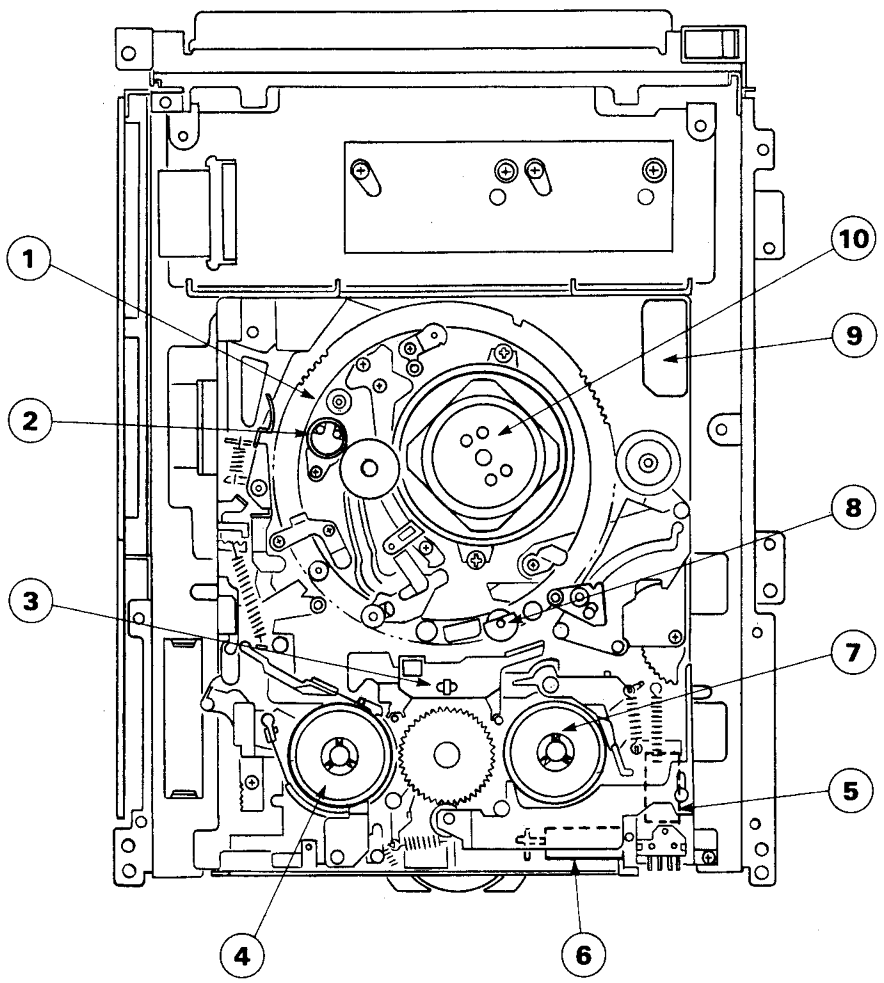
Open the Function Control Panel, while pushing down the left and right levers on the front of the panel. Open the panel at a 90 degrees and it is possible to operate the switches on the sub-panel. Opening angle of the panel can be adjusted to 30, 60, and 90 degrees respectively.



2-7. LOCATION OF MAIN PARTS

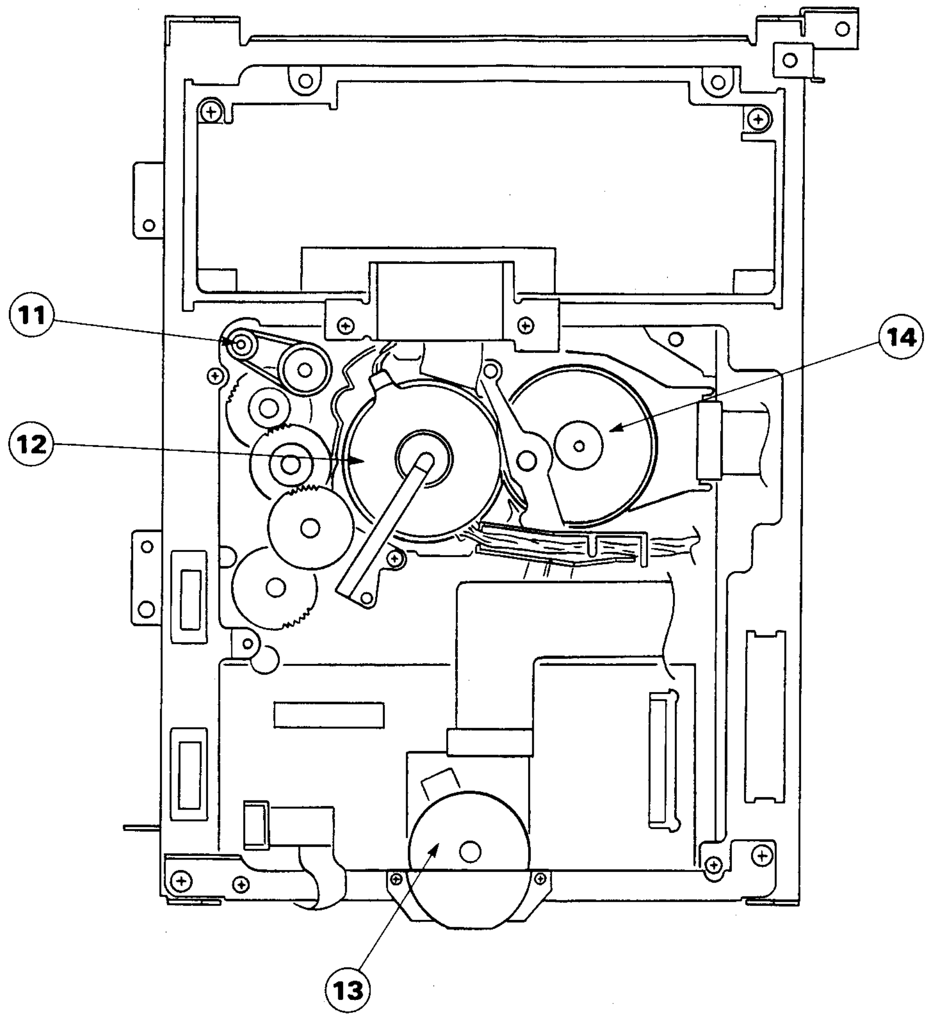
2-7-1. Location of the Main Mechanical Parts/Components

TOP VIEW



①Threading Ring
②Capstan Shaft
③Tape Top/End LED
④Supply Reel Table
⑤Control Motor
⑥Brake Plunger Solenoid
⑦Take-up Reel Table
⑧Pinch Roller Arm Assembly
⑨Threading Motor
⑩ Drum

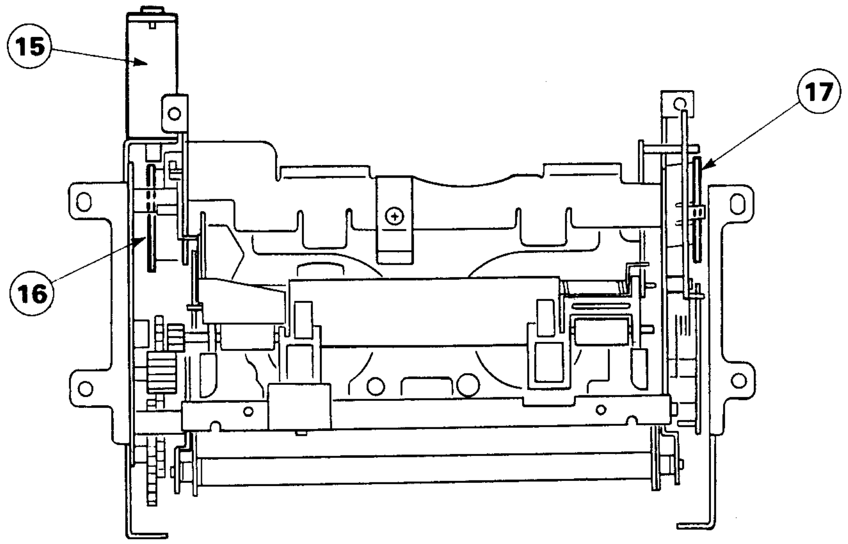
BOTTOM VIEW



⑪ Threading Motor
⑫ Drum
⑬ Reel Motor
⑭ Capstan Motor

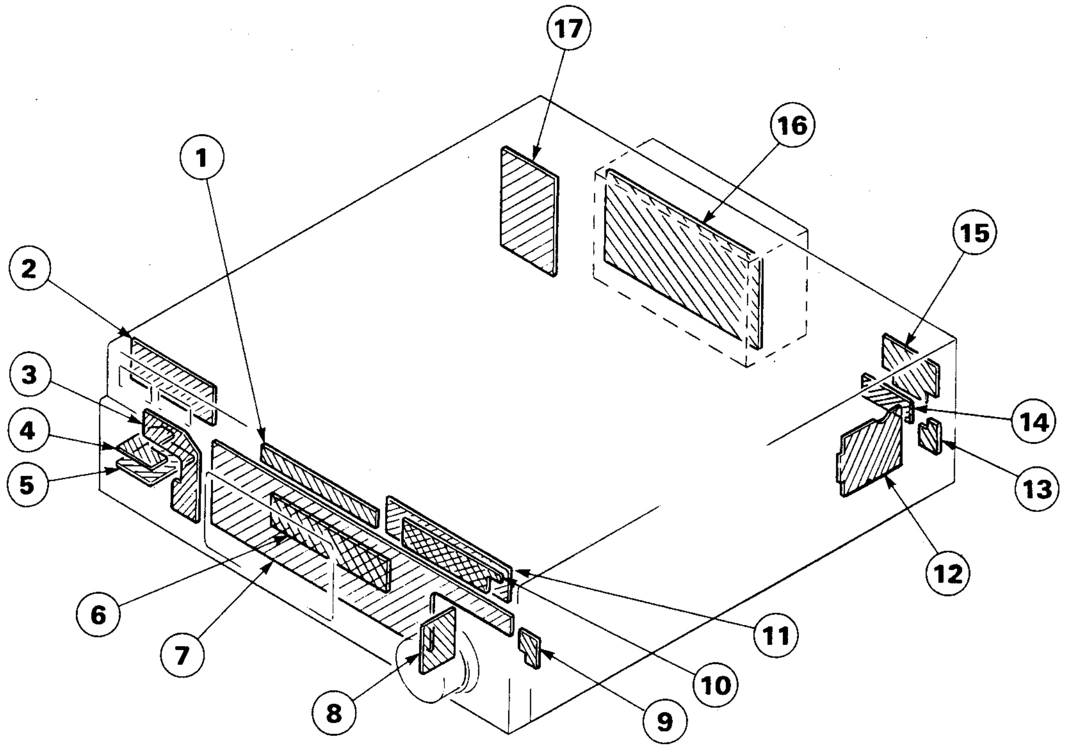
CASSETTE-UP COMPARTMENT

TOP VIEW



⑮ Cassette Loading Motor
⑯ Tape End Sensor
⑰ Tape Top Sensor

-7-2. Location of the Printed Circuit Boards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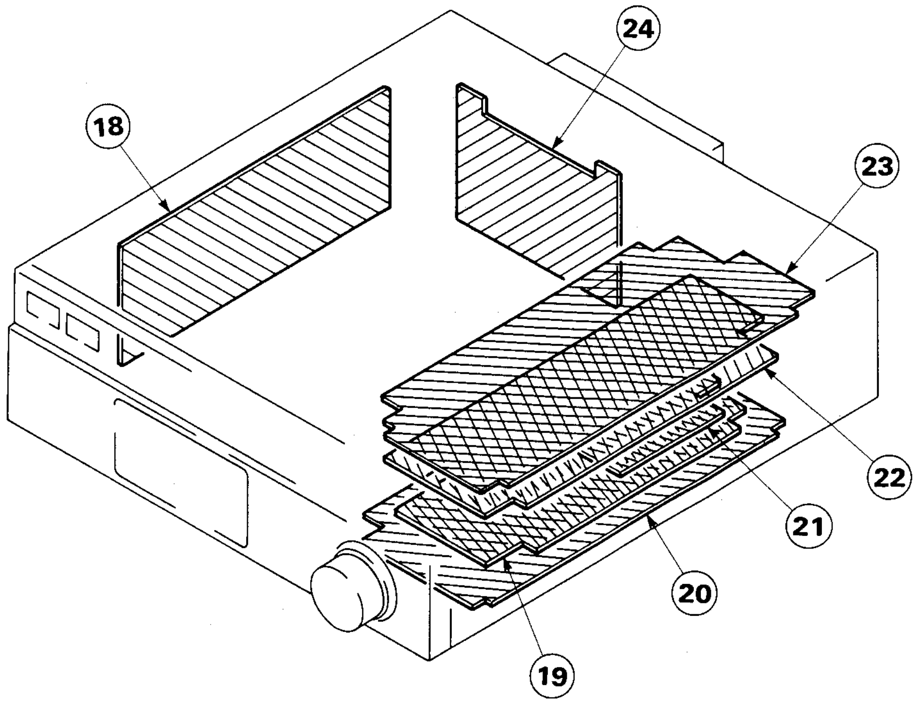
24
18
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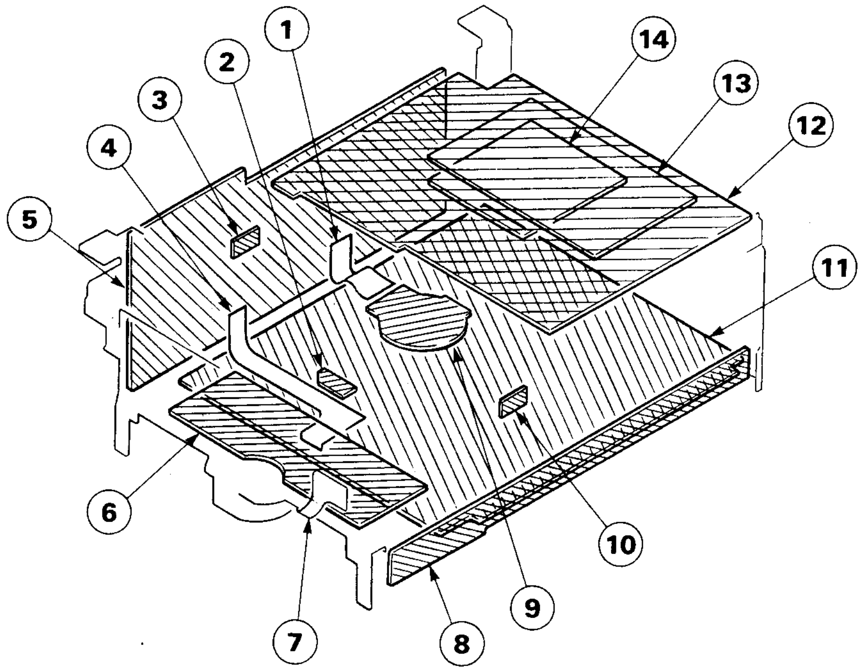
19

①LP-52 Board
②MT-57 Board
③SW-346 Board
④HP-42 Board
⑤MC-28 Board
⑥SW-347A Board
⑦KY-162 Board
⑧PTC-32 Board
⑨SW-348 Board

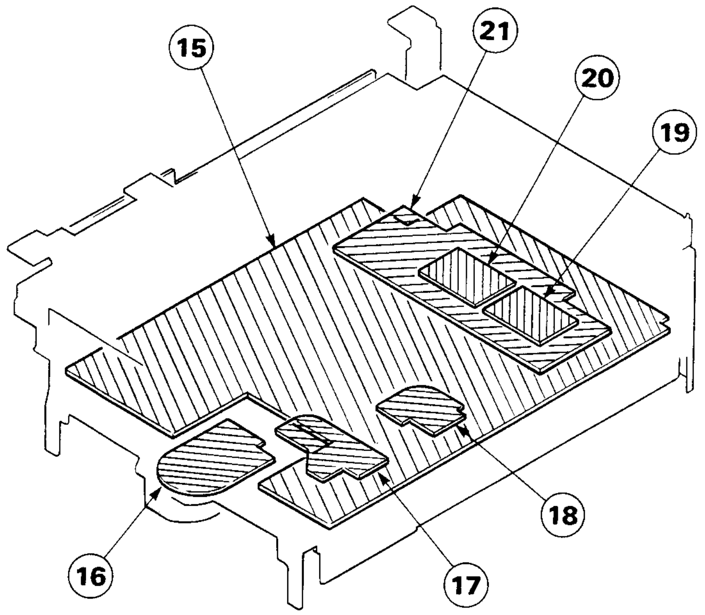
⑩ DP-101 Board
⑪ DD-12 Board
⑫ AC-89 Board
⑬ CP-162 Board
⑭ RM-88 Board
⑮ CP-141 Board
⑯ Switching Regulator (UR-14E)
⑰ AA-16 Board

⑱ AU-127 Board
⑲ DI-12 Board
⑳ SY-145A Board
㉑ DI-13 Board
㉒ YC-46 Board
㉓ VO-30 Board
㉔ DC-45A Board



①FP-84 Flexible Board
②LD-1 Board
③TS-74 (L) Board
(Cassette-up Compartment)
④FP-122 Flexible Board
⑤MD-23(P) Board
⑥RS-31 Board
⑦FP-206 Flexible Board

⑧ IG-4 Board
⑨Capstan Motor Board
⑩ TS-74 (R) Board
(Cassette-up Compartment)
⑪ HK-5 Board
⑫ MB-19 Board
⑬ PD-19 Board
⑭ PA-27 Board



⑮ SE-10(P) Board
⑯ Reel Motor Board
⑰ MS-4 Board
⑱ LS-9 Board
⑲ RP-103 Board (SP)
⑳ RP-73 Board (LP)
㉑ FR-43 Board

2-8. PRINTED CIRCUIT BOARDS

The circuit information is provided below.

SYSTEM	BOARD	CIRCUIT FUNCTION
VIDEO	YC-46 VO-30	YC Separator Video Interface
AUDIO	AU-127 AA-16	Audio Input/Output Amp XLR Input/Output Amp
SYSCON	SY-145A KY-162 DP-101 DD-12 PTC-32	System Control Function Key Board Display Display Drive Search Dial
DIGITAL PROCESS	DI-12 DI-13	Digital CNR Read Timing Control Pulse Generator
POWER	AC-89 DC-45A	AC Input DC Supply
Others	LP-52 CP-141 SW-346 SW-347A SW-348 MC-28 HP-42 MT-57 RM-83 CP-162	Mode Display Connector Panel Audio Level Control Audio select SW Remote Panel SW Mic.Jack Head phones Level Audio Meter Level 9-pin Connector S Connector IN-OUT

Mechanical deck

SYSTEM	BOARD	CIRCUIT FUNCTION
VIDEO	FR-43 HK-5 RP-73 RP-103	Head Amp/Flying Erase Y/C Video process REC/PB Head Amp (LP) REC/PB Head Amp (SP)
AUDIO	MB-19 PA-27 PD-19	PCM Audio PCM Audio Analog PCM Audio Digital
SYSCON SERVO	TS-74 IG-4 LD-1 MS-4 LS-9 RS-31 MD-23 (P) SE-10 (P)	Tape Top/End Sensor Terminal Tape Sensor Mode Switch Loading Switch Mechanism Control Capstan/Drum Drive Servo, Syscon
Others	FP-84 FP-206 FP-122	Connection Connection Connection

2-9. CONNECTORS

When external cables are connected to the various connectors on the connector panel during maintenance, the hardware listed below (or equivalents) must be used.

PANEL INDICATION	CONNECTOR
VIDEO IN VIDEO OUT SYNC IN MONITOR VIDEO	1-560-069-11 PLUG, BNC, MALE
MONITOR AUDIO	1-506-311-00 PLUG, PIN
DUB OUT	1-508-948-00 PLUG, 7P, MALE
REMOTE(9P)	1-560-651-00 PLUG, 9P, MALE and 1-561-749-00 JUNCTION SHELL, 9P
AUDIO LINE IN	1-508-084-00 CONNECTOR, XLR, 3P, MALE
AUDIO LINE OUT	1-508-083-00 CONNECTOR, XLR 3P, FEMALE
MONITOR TV	1-506-161-00 CONNECTOR, 8P, MALE
S-VIDEO IN S-VIDEO OUT	S-VIDEO CONNECTOR CONNECTING CABLE (Option): YC-30V (3m) YC-15V (1.5m)

2-10. CONNECTOR INPUT/OUTPUT SIGNAL

The connector INPUT/OUTPUT signals of the connector panel are as follows.

INPUT

VIDEO IN : 1.0 ± 0.3 Vp-p, 75 ohms, unbalanced, sync negative

SYNC IN : 1 to 5 Vp-p, 75 ohms, unbalanced, sync negative

MIC IN (front panel) : -60 dBu, more than 3k ohms (600 ohm microphone is usable.) unbalanced

AUDIO LINE IN (CH-1/L, CH-2/R) : +4 dBu, more than 10k ohms (600 ohm possible), balanced

S-VIDEO IN : Y : 1.0 ± 0.2 Vp-p, 75 ohms unbalanced, sync negative
C : 0.3 ± 0.06 Vp-p, 75 ohms unbalanced

OUTPUT

VIDEO OUT : 1.0 ± 0.2 Vp-p, 75 ohms, unbalanced, sync negative

MONITOR VIDEO OUT
TV-VIDEO OUT (8P)
DUB OUT : 1.0 ± 0.2 Vp-p, 75 ohms, unbalanced, sync negative

AUDIO LINE OUT (CH-1/L, CH-2/R) : +4 dBu (at 600-ohm load), balanced

MONITOR AUDIO OUT
TV-AUDIO OUT (8P) : -5 dBu (at 47k-ohm load), unbalanced

HEADPHONES OUT (front panel) : -46 to -26 dBu (at 8-ohm load), adjustable, stereo

S-VIDEO OUT : Y : 1.0 ± 0.2 Vp-p, 75 ohms unbalanced, sync negative
C : 0.3 ± 0.06 Vp-p, 75 ohms unbalanced

MONITOR

8P

Pin	Output Signal
1	AUDIO MONITOR OUT (X)
2	VIDEO OUT (X)
3	NC
4	NC
5	AUDIO MONITOR OUT (G)
6	VIDEO OUT (G)
7	NC
8	NC

REMOTE CONTROL

REMOTE 1 (9P)

Pin	I/O Signal	I/O
1	FRAME GND	—
2	TRANSMIT A	O
3	RECEIVE B	I
4	RECEIVE COMMON	—
5	SPARE	—
6	TRANSMIT COMMON	—
7	TRANSMIT B	O
8	RECEIVE A	I
9	FRAME GND	—

2-11. SPARE PARTS

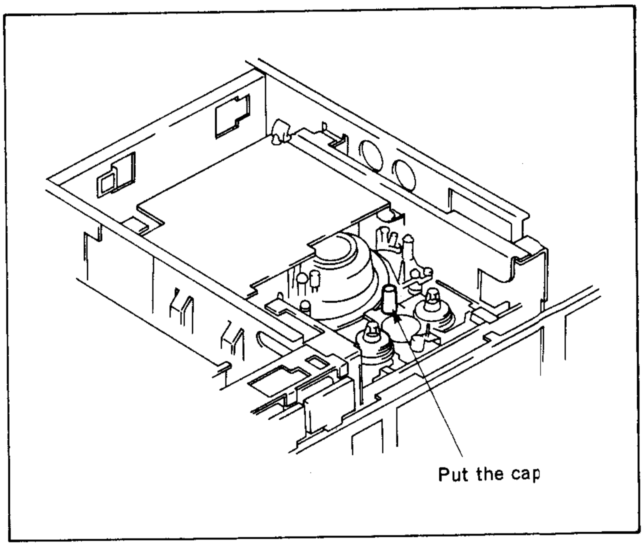
(1) The ⚠ -marked components are critical to safety. Replace only with same components as specified.

(2) Replacement parts supplied from the Sony Parts Center will sometimes have a different shape from the original parts. This is due to **accommodating the improved parts and/or engineering changes** or **standardization of genuine parts.** This manual's exploded views and electrical spare parts list indicate the part numbers of the **standardized gunuine parts at the present.** Regarding engineering part changes in our engineering department, refer to Sony service bulletins and service manual supplements.

(3) The parts marked with **s** in the SP column of the exploded views and electrical spare parts list are normally stocked for replacement purposes. The parts marked with **o** in the SP column are not normally required for routine service work. Orders for parts marked with **o** will be processed, but allow for additional delivery time.

2-12. MUTING OF THE TAPE BEGINNING SENSOR AND TAPE END SENSERS

Put the cap on the LED Assembly as shown in the figure.



2-13. HOW TO OPERATE THE UNIT WITHOUT CASSETTE-UP COMPARTMENT AND CASSETTE TAPE INSERTING

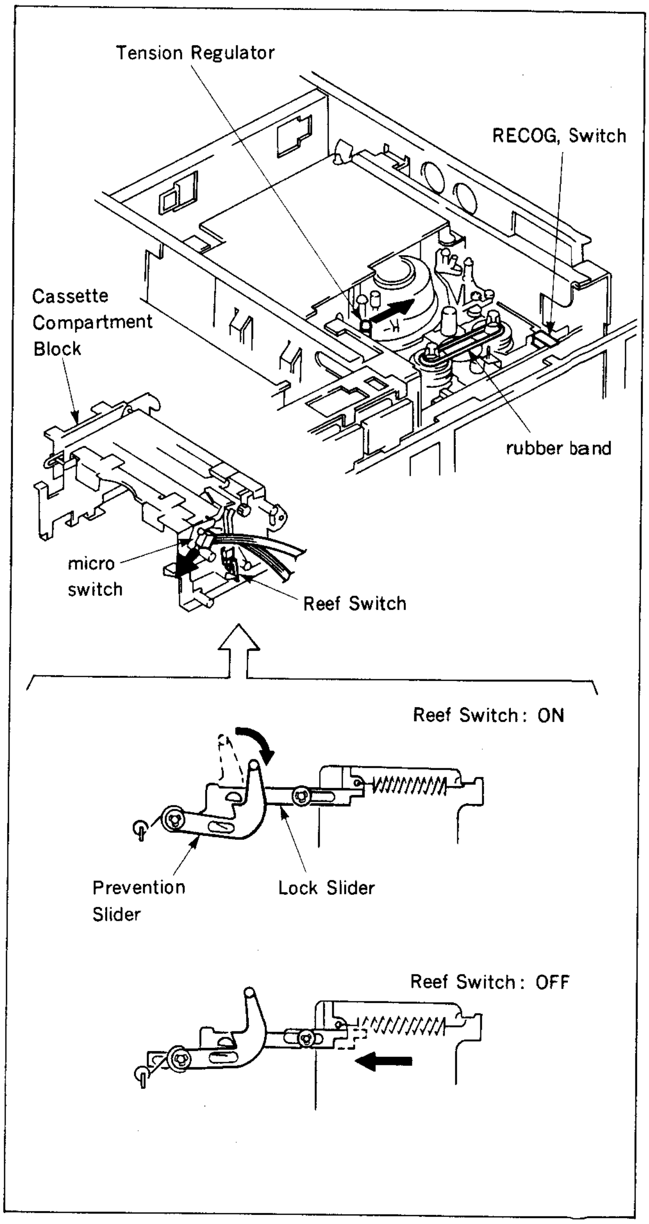
. The unit will not operate if there is a strong light source near it.

1. How to put the unit into the THREADING mode.
   (1) Remove the Top Panel and Front Panel referring to Section 2-1.
   (2) Remove the Cassette Compartment Assembly from the unit referring to Section 2-3. Then do not disconnect the connectors.
   (3) Turn the power ON.
   (4) Stick the adhesive tape on the RECOG Switch and the pins are pressed.
   (5) Press the micro switch of the Cassette Compartment Block on time in the direction of the arrow, and remove it.
   (6) Turn the Reef Switch of the Cassette Compartment Block ON.

2. How to put the unit into the Playback or Recording mode.
   (1) Put the unit into the THREADING mode referring to the above procedures.
   (2) Hook a rubber band between S Reel table and T Reel Table.
   (3) Press the REC or PLAY Button of the Key Panel. When the T Reel Table starts rorating, press the Tension Regulator Arm Assembly in the direction of the arrow. Then the Tension Regulator Band is released and the S Reel Table Starts turning.
   (4) How to put the unit into the STOP mode, press the STOP key of the Key Panel.

3. How to put the unit into the EJECT mode.
   (1) Press the EJECT Button of the Key Panel.

   Note: It is possible to operate (REC, PLAY STOP, EJECT etc.) the unit with switches on the MB-19 Board in stead of using buttons of the Key Panel. If turn the POWER Switch on the MB-19 Board to OFF, the unit can not be operated.

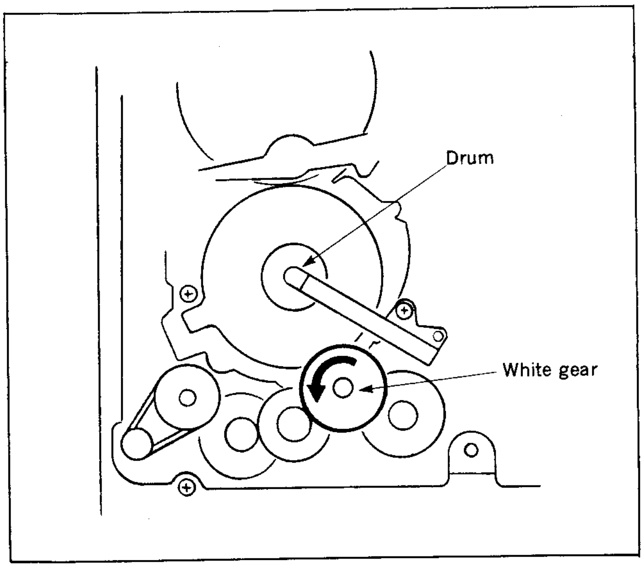

Tension Regulator
RECOG, Switch
Cassette Compartment Block
rubber band
micro switch
Reef Switch
Reef Switch: ON
Prevention Slider
Lock Slider
Reef Switch: OFF

2-14. CASSETTE TAPE REMOVAL PROCEDURE WHEN NORMAL EJECTION IS NOT POSSIBLE

I. When the winding cassette tape can not be removed from the Drum.

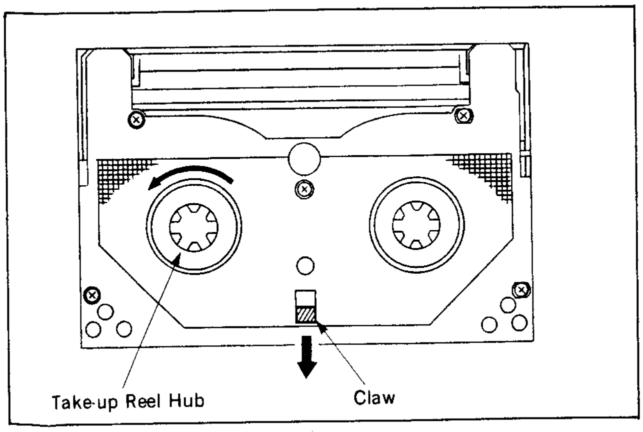
(1) Remove the Top Panel and remove the Bottom Plate referring to Section 2-1.

(2) Turn the white gear near the Drum counter-clockwise and release the winding tape from the Drum.



(3) The cassette tape remains inserting and remove the Cassette-up Copmpartment Block referrng to Section 2-3.
At this time, be careful that the tape is not hooked to the Mecha-block.

(4) Turn the Take-up Reel Hub counterclockwise while pushing the claw of the back of the cassette in the direction of arrow. Wind up the tape into the cassette by hand.



(5) Remove the cassette tape from the Cassette-up Compartment Block.

There are two ways as follows:

1. Turn the Worm Gear in the direction of the arrow for releasing the lock of the Cassette Holder while pushing the Lock Slider in the direction of the arrow by hand. (fig.1) Then the Cassette Holder gradually rises and the cassette tape is ejected.

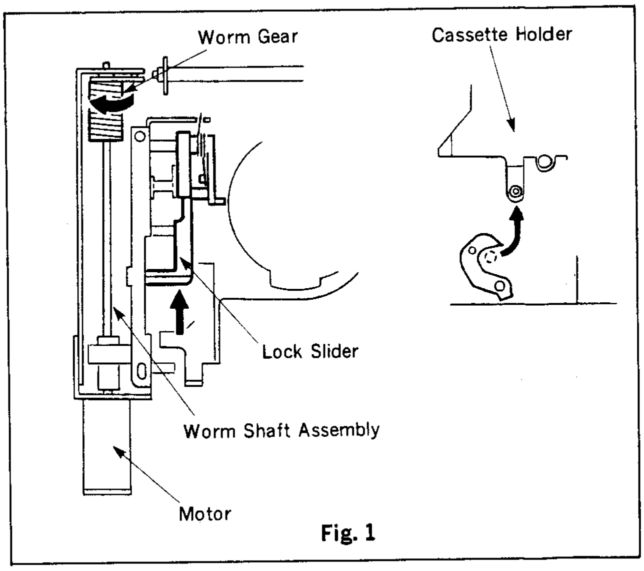


Fig. 1

2. Remove the two fixing screws and remove the Motor Bracket, Motor and Worm Shaft Assembly. Push the Lock Sleder in the direction of the arrow as shown in figure 1. Raise the Cassette Holder by hand and the cassette tape is ejected.

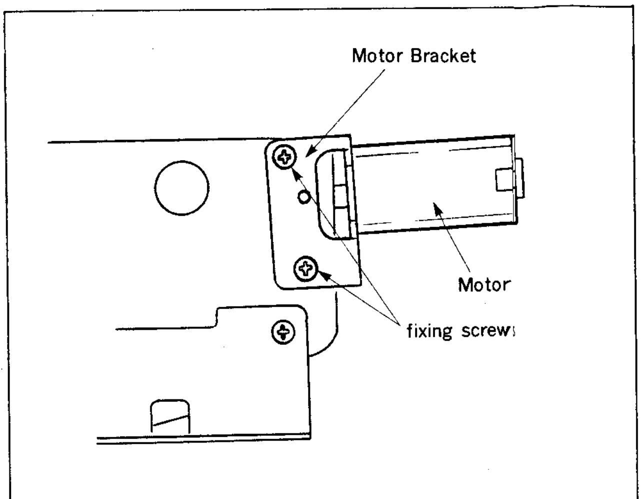
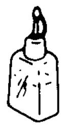


Fig. 2

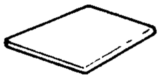
2-15. FIXTURE

Ref. No.	Parts No.	Description	Application
J-1	Y-2031-001-1	Cleaning Fluid	Cleaning
J-2	7-741-900-53	Wiping Cloth	Cleaning
J-3	Commercially sold	Head Degausser	Head degauss adjustment
J-4	J-6080-840-A	Small Adjustment Mirror	
J-5	8-967-995-07	Alignment Tape, WR5-1CP	Tape path adjustment
	8-967-995-18	Alignment Tape, WR5-7CE	Video frequency response adjustment
	8-967-995-47	Alignment Tape, WR5-4CSP	Video adjustment
	8-967-995-48	Alignment Tape, WR5-8CSE	Serve, audio and video adjustment (SP)
	8-967-995-57	Alignment Tape, WR5-8CLE	Servo, audio and video adjustment (LP)
	8-967-992-17	Alignment Tape, WR2-3CS	Switching position adjustment
J-6	J-6080-827-A	Dial Tension Gauge	Measurement of torque
J-7	J-6080-831-A	Tension Measurement Reel	FWD Back tension adjustment
J-8	J-6080-832-A	Tension Measurement Reel	Brake torque check
J-9	J-6080-823-A	No. 10 Gear Phase Tool	Threading ring assembly replacemnt
J-10	J-6080-826-A	No. 6 Guide Lock Screwdriver	Tape path adjustment
J-11	———	Rotary Drum Tool (packed with the Rotary Upper Drum for repair)	Rotary upper drum replacement
J-12	J-6080-824-A	FWD, RVS Winding Torque Cassette	S•T reel table winding torque check
J-13	J-6080-825-A	Mode Selector	Mechanical check, adjustment and replacement
J-14	J-6080-891-A	Track Shift Tool	Tape path adjustment
J-15	J-6080-883-A	RE/SWP Connector	Tape path adjustment
J-16	J-6080-884-A	CTL Connector	Tape path adjustment
J-17	7-700-766-01	Hexagonal Screwdriver (0.89 mm)	Tape path adjustment

J-1



J-2



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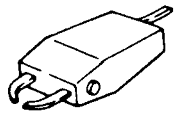

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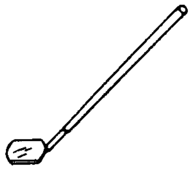
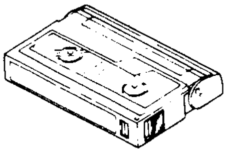


J-5



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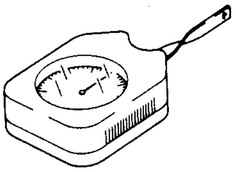
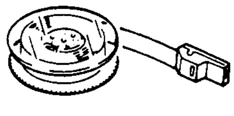
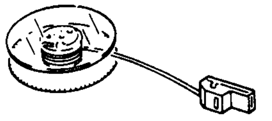


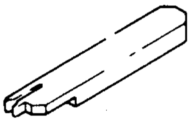
J-7



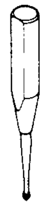
J-8



J-9

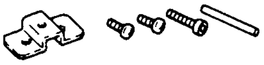


J-10

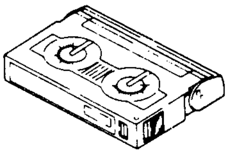


J-11

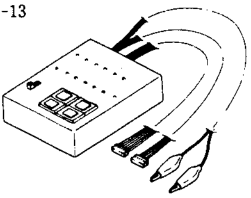
(Packed with the rotary upper drum for repair)



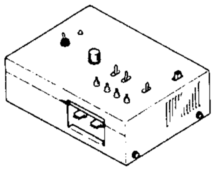
J-12



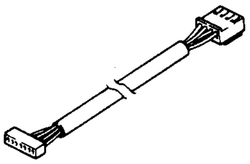
J-13



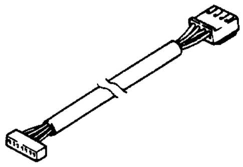
J-14



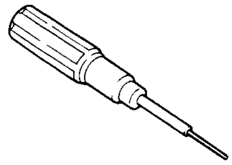
J-15



J-16



J-17



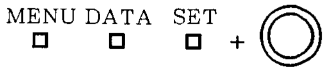
2-16. DIAL MENU OPERATION

The system controls (Still Timer, Preroll Time, etc.) initially set at the factory can be arbitrarily modified using the SEARCH dial, MENU button, DATA button, and SET button.

The dial menu has the following functions:

- . BASIC FUNCTION
- . ENHANCED FUNCTION

2-16-1. Button and Dial Settings



Search dial: Selects the ITEM, Modifies the DATA, Moves the cursor.
MENU button: Selects the ITEM when used with a SEARCH dial.
DATA button: Modifys the DATA when used with a SEARCH dial.
SET button : Writes the DATA into the memory.

2-16-2. Operation

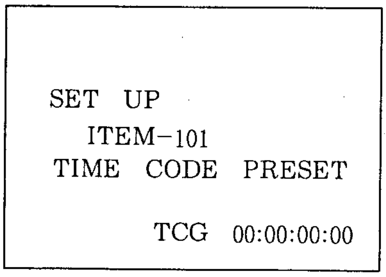
Put the unit into DIAL MENU operation mode

The DIAL MENU opration data appears on the Front Panel's time counter display and monitor television (the video signals should be connected to the VIDEO IN connector and the monitor television should be connected to the MONITOR OUT connector on the Connector Panel).

(1) Set the REMOTE/LOCAL switch on the Front Panel to LOCAL.
(2) Put the unit into JOG mode (when the SHUTTLE lamp is on, press the SEARCH dial).
(3) Press the STOP button and put into the STOP mode or PLAY PAUSE mode.
(4) Set the CTL/TC/DIAL MENU switch on the Front Panel to DIAL MENU.
The unit is put into the DIAL MENU mode and the ◁□▷ lamp at the top of the SEARCH dial lights.

time counter display

Monitor



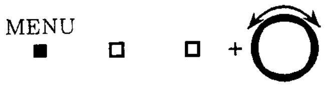
SET UP
ITEM-101
TIME CODE PRESET

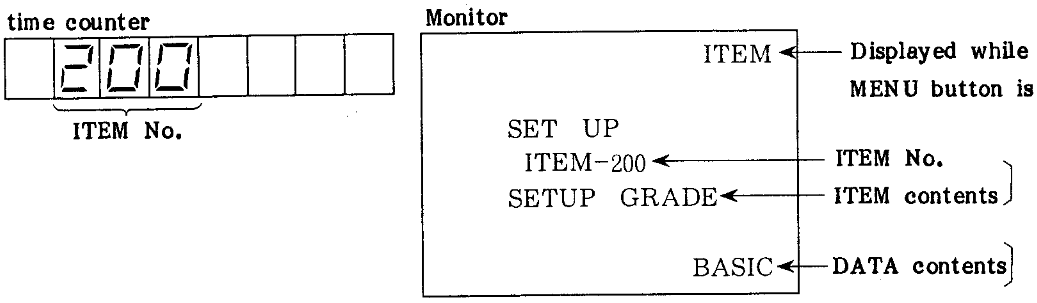
TCG 00:00:00:00

(NOTE) The VTR cannot be operated normally in the DIAL MENU operation mode.

Select the ITEM

(5) Turn the SEARCH dial while pressing the MENU button.




time counter
200
ITEM No.
Monitor
ITEM
SET UP
ITEM-200
SETUP GRADE
BASIC
ITEM No.
ITEM contents
DATA contents

Displayed while the MENU button is pressed.

When the SEARCH dial is turned, the ITEM No. and contents are changed.

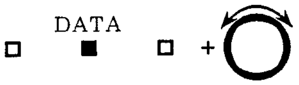
The data corresponding to the ITEM No. are displayed.

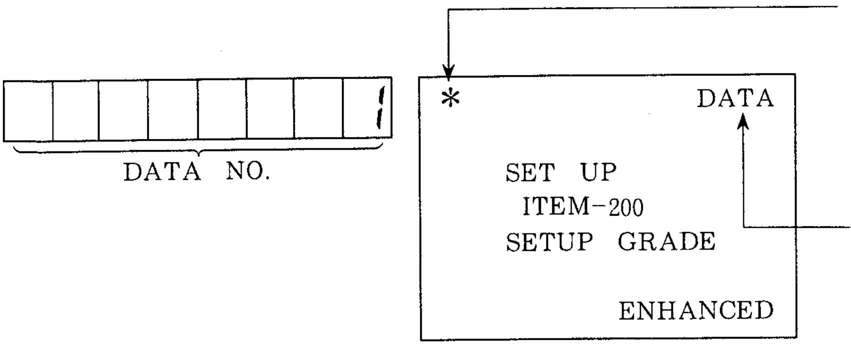
(6) Stop the dial when the desired ITEM is displayed, and then release the MENU button.

When the DATA No. on the time counter display and DATA contents on the monitor blink, they can be modified as following method.

Modify the data

(7) Turn the dial while pressing the DATA button.




1
DATA NO.
*
DATA
SET UP
ITEM-200
SETUP GRADE
ENHANCED

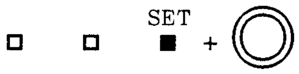
When data other than that set at the factory is displayed on the monitor, an asterisk (*) appears. (but does not appear on the time counter display.)

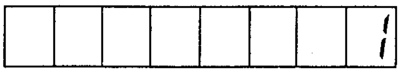
Displayed while the DATA button is pressed.

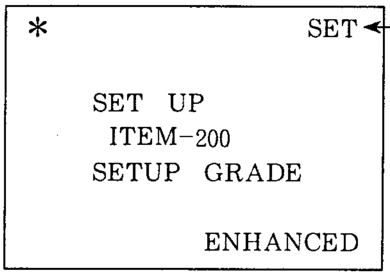
(8) Stop the dial when the desired data is displayed, and release the DATA button.

Set the data

(9) Press the SET button.







* SET

SET UP
ITEM-200
SETUP GRADE

ENHANCED

Displayed while the SET button is pressed. (For ITEM No. 101 is displayed only when data is set.)

- The displayed data is written into the memory, the data remains unchanged even if the POWER switch is turned OFF.
- If the updated data is set, the ◁□▷ lamp at the top of the SEARCH dial flashes for one second when the SET button is pressed. The DATA No. and DATA content blinking stops at that time.

2-16-3. ITEM/DATA

(1) BASIC FUNCTION

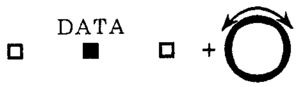
ITEM		DATA		ITEM and DATA Description
ITEM No. time counter	ITEM content monitor display	DATA No. time counter	DATA content monitor display	
101	TIME CODE PRESET	00000000 ~ 23595929	TCG00:00:00:00 ~ TCG23:59:59:29	Time code setting. 00H00M00S00Fr through 23H59M59S29Fr can be set. Factory setting: DATA No. 00000000 (TCG 00 : 00 : 00 : 00)
105	CHARACTER POSITION	0 ~ 15	OFF 1 ~ 15	Set the character position that is super-imposed on the monitor (only the vertical direction). When set to OFF, the character is not displayed. Factory setting: OFF
106	CHARACTER SIZE	0 1	SMALL LARGE	Set the character size that is displayed on the monitor. Factory setting: DATA No.0 (SMALL)
200	SETUP GRADE	0 1	BASIC ENHANCED	DATA No. 0 BASIC: Enable to select ITEM from 101 to 200 in the DIAL MENU operation. DATA No. 1 ENHANCED: Enable to select ITEM from 101 to 227 in the DIAL MENU operation. Factory setting: DATA No. 0 (BASIC)

Setting the data in the ITEM No.101

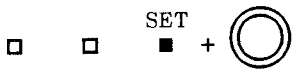
(NOTE). Select the TIME CODE SLAVE MODE in the ITEM No. 227.

1. Turn the SEARCH dial and blink the desired digit.

2. Turn the dial while pressing the DATA button to set the desired figures.



3. Repeat the steps 1, 2 to set the desired figures.
4. When completed, press the SET button.



(2) ENHANCED FUNCTION

The ENHANCED FUNCTION can be used by setting data to ENHANCED in the ITEM No. 200.

ITEM		DATA		ITEM and DATA Description
ITEM No. time counter	ITEM content monitor display	DATA No. time counter	DATA content monitor display	
201	ERROR STATUS	 Error 02 Error 10 Error 20 Error 21 Error 22 Error 90 Error 99	NONE TAPE SLACK HUMID SYSTEM ERROR SYSTEM ERROR 50	Self-diagnostic function. When trouble occurs during normal operation, message "ERROR CODE" appears on the Front Panel's time counter display in any mode. When the unit is put into the DIAL MENU mode to select this ITEM, error status corresponding to the error code are displayed on the monitor. (Refer to Section 2-17-4 for further details.) NOTE: The ITEM data content cannot be modified. Normal operation: ················(NONE)
205	HOUR METER (DRUM)	00000 | 15000	00000H | 15000H	Displays the rotation time of the upper drum. Head replacement can be decided at that time. Up to from 0H to 15000H can be displayed. NOTE: The ITEM data content cannot be modified.
206	HOUR METER	00000 | 15000	00000H | 15000H	Displays the total time of the power on sequence. Up to from 0H to 15000H can be displayed. NOTE: The ITEM data content cannot be modified.
207	STILL TIMER	00	0.5 SEC.	The unit automatically enters the tape PROTECTION mode after it has been in the tape STOP (or STILL) mode for a fixed time to prevent the video head from clogging (to reduce the tape damage). This item sets the transition time of the tape STOP to tape PROTECTION mode. The time can be set from 0.5 seconds to 7 minutes.
		01	1 SEC.	
		02	5 SEC.	
		03	10 SEC.	
		04	20 SEC.	
		05	30 SEC.	
		06	40 SEC.	
		07	50 SEC.	
		08	1 MIN.	
		09	2 MIN.	
		10	3 MIN.	
		11	4 MIN.	
		12	5 MIN.	
		13	6 MIN.	
		14	7 MIN.	
		15	7 MIN.	Factory setting: DATA No. 15 (7 MIN)

ITEM		DATA		ITEM and DATA Description
ITEM No. time counter	ITEM content monitor display	DATA No. time counter	DATA content monitor display	
209	SELECTION FOR SEARCH DIAL ENABLE	0 1	DIAL DIRECT VIA SEARCH BUTTON	When the SEARCH dial is turned or the SEARCH button is pressed, the unit enters the SEARCH mode. This item sets entering the SEARCH mode. DATA No. 0 DIAL DIRECT : When the SEARCH dial is turned, the unit enters the SEARCH mode from any mode other than REC/EDIT. DATA No. 1 VIA SEARCH BUTTON : When the SEARCH button is pressed, the unit enters the SEARCH mode. Factory setting : DATA No.1 (VIA SEARCH BUTTON)
214	PREROLL TIME	00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15	0 SEC. 1 SEC. 2 SEC. 3 SEC. 4 SEC. 5 SEC. 6 SEC. 7 SEC. 8 SEC. 9 SEC. 10 SEC. 11 SEC. 12 SEC. 13 SEC. 14 SEC. 15 SEC.	Sets the preroll time during editing. The preroll time can be set from 0 to 15 seconds. Factory setting : DATA No. 05 (5 SEC)
218	PINCH ON DELAY	0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15	0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15	Adjusts the time required from PLAY command sending to tape transport. Factory setting : DATA No. 3 (3)

ITEM		DATA		ITEM and DATA Description
ITEM No. time counter	ITEM content monitor display	DATA No. time counter	DATA content monitor display	
224	TAPE PROTECTION MODE	0 1	STEP FWD LONG PAUSE	When the time in the SEARCH STILL mode set using ITEM No. 207 passes, selects the mode setting. DATA No. 0 STEP FWD : The tape is sent repeatedly for one second at 1/30 times normal speed in the forward direction. DATA No. 1 LONG PAUSE : Enters the LONG PAUSE mode. Factory setting : DATA No. 0 (STEP FWD)
226	DIGITAL CNR LEVEL	0 1 2	OFF 1 2	Croma Noise Reduction OFF 1 : minimum 2 : maximum Factory Setting : DATA No. 2 (2)
227	TIME CODE SLAVE MODE	0 1	OFF ON	ON : When straing the record from portion which the time code has already recorde, the time code is recorded continuously. When staring the record from portion which the time code is not recorded, it is recorded from "00 : 00 : 00" OFF : The time code is recorded from the Time Code Preset Data which is set by menu 101. Factory Setting : DATA No. 1 (ON)

2-16-4. System Error

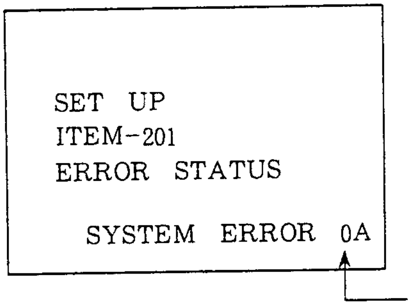
When a trouble occurs during normal operation and an error code appears on the time counter display of the Front Panel, the error status corresponding to the error code is displayed on the monitor by selecting the Item No. 201 on the dial menu. The error cause can be learned at that time.

Counter display	Monitor display	Description
Error 02	TAPE SLACK	Excessive tape tension
Error 10	HUMID	The condensation
Error 20	SYSTEM ERROR	Mechanical error. Distinguished by the suberror code. (Refer to the following.)
Error 21	——	RAM error when the POWER is ON.
Error 22	SYSTEM ERROR	Communication error between optional BKU-703A and the unit.
Error 90	——	Communication error between SY board and KY board.
Error 99	——	Lacking the 1/2 VD pulse to supply for the SY board.

(NOTE) Displayed on the time counter display about ERROR 21, 90,99.

When Error 20 "SYSTEM ERROR" appears, a suberror code is displayed at the lower right corner on the monitor.
The suberror code is described below.

Monitor



SET UP
ITEM-201
ERROR STATUS

SYSTEM ERROR 0A

Suberror code

The suberror code is a two-digit hexadecimal number. Assume that the high-order digit is called Error 1 and tje low-order digit called Error 0.

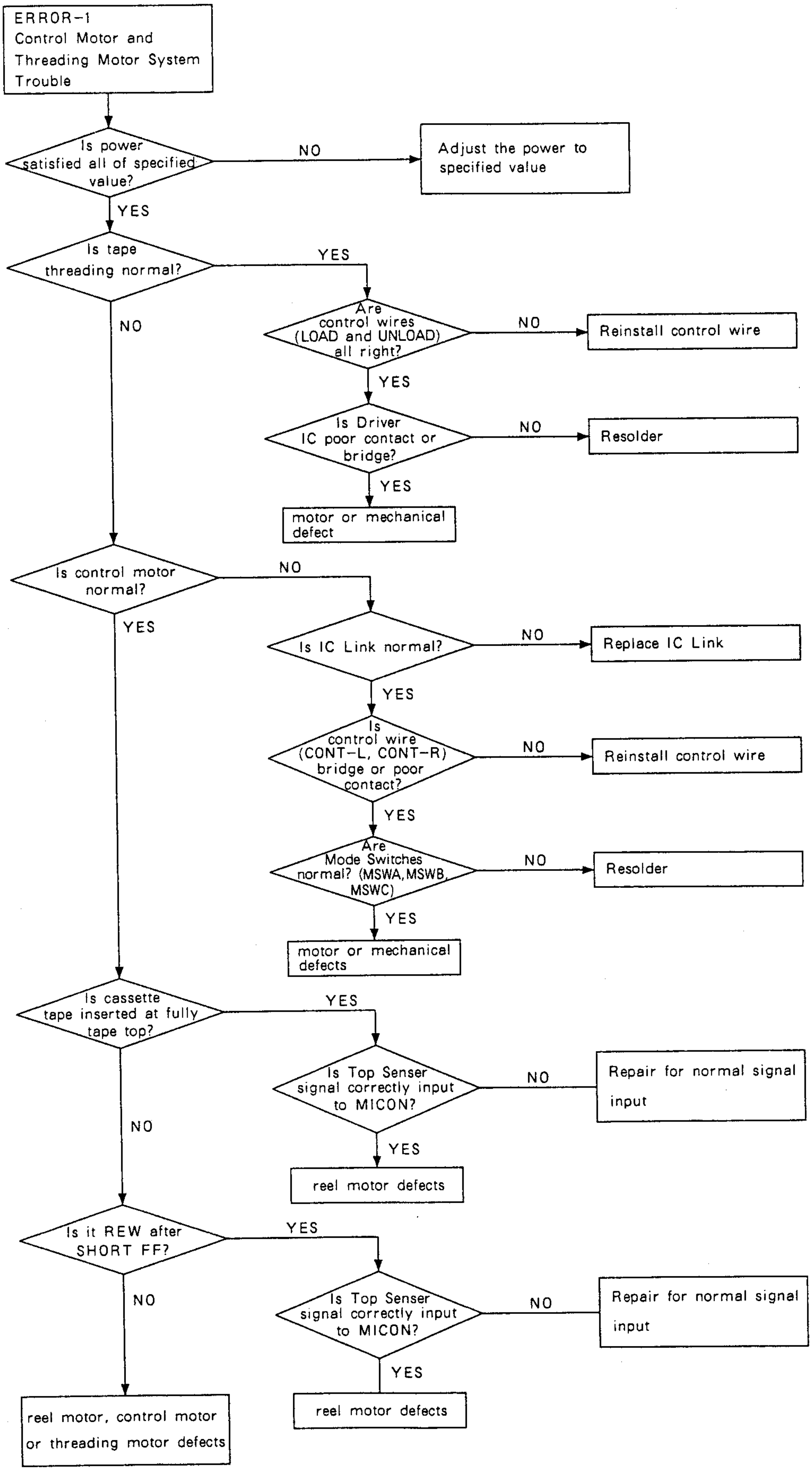
Error 0

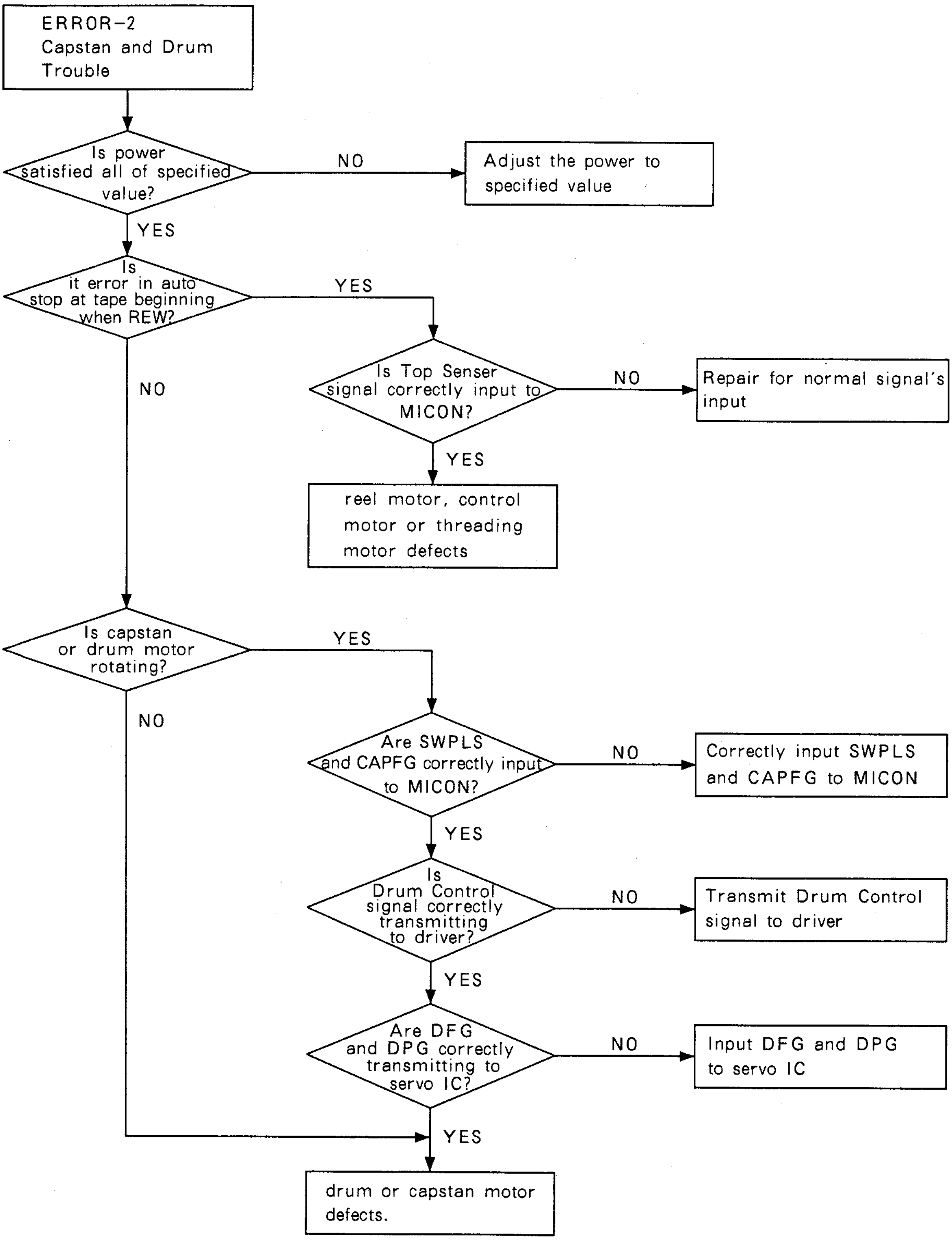
0	Normal operation
1	Control signal error of threading motor and control motor systems, error of reel motor, or communication error of TOP/END sensor.
2	Tape top error or control signal error of drum/capstan.
3	Error of Cassette-up Comparrment, Cassette-up Motor, control line and mechanical switch.
4	Communication error between mechanical control and ATF control.
5	Communication error between microcomputor M1 and mechanical Block.

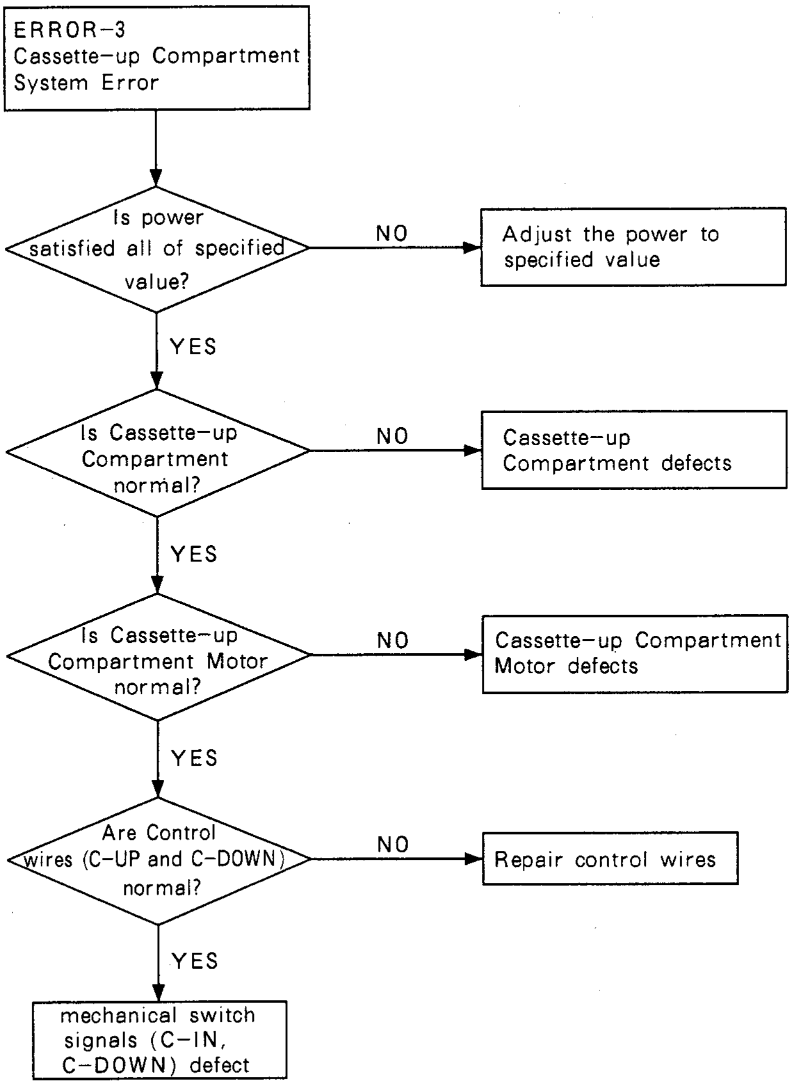
Error 1

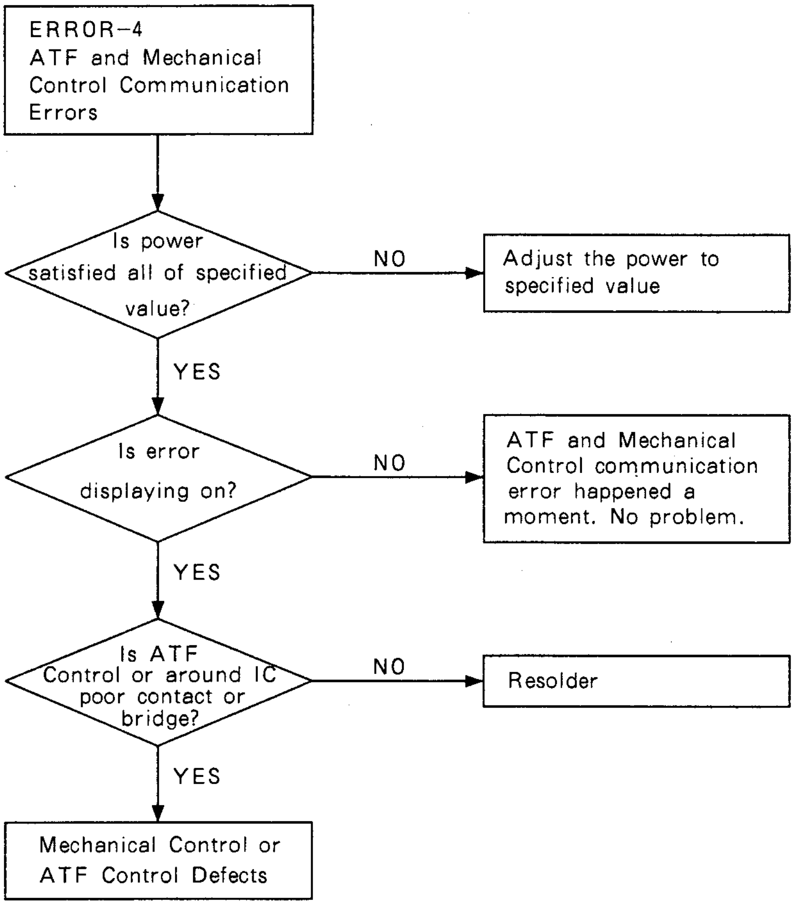
0	Normal operation

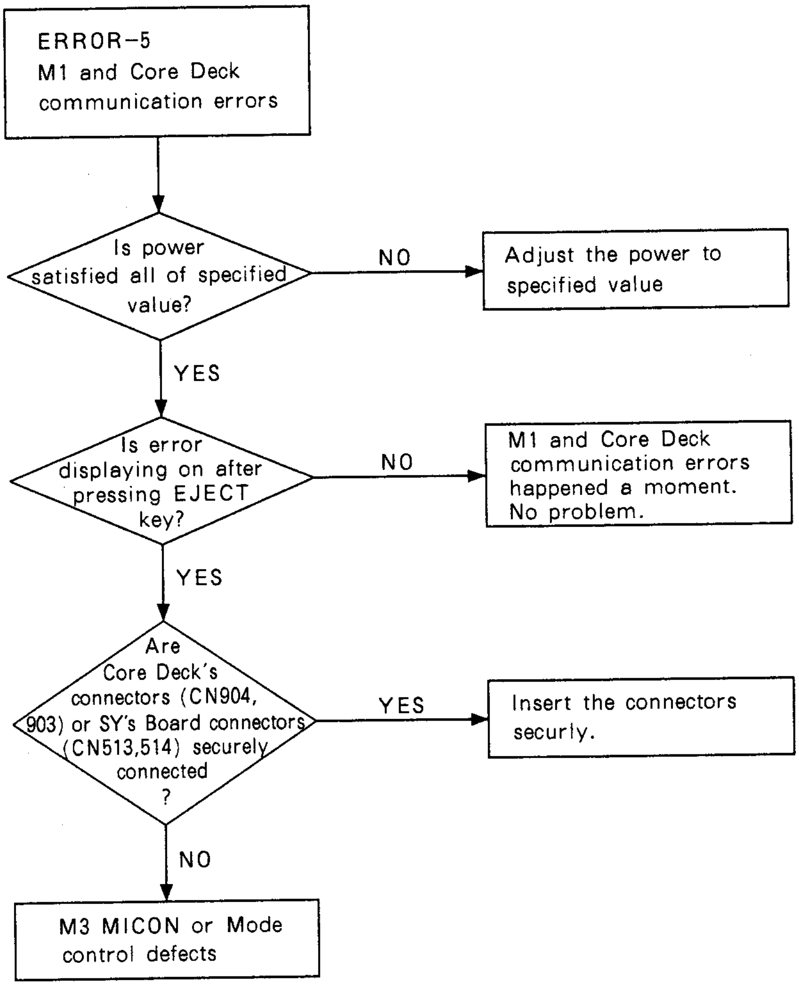
FLOW CHART


ERROR-1
Control Motor and
Threading Motor System
Trouble
Is power satisfied all of specified value?
NO
Adjust the power to specified value
YES
Is tape threading normal?
YES
Are control wires (LOAD and UNLOAD) all right?
NO
Reinstall control wire
YES
Is Driver IC poor contact or bridge?
NO
Resolder
YES
motor or mechanical defect
NO
Is control motor normal?
NO
Is IC Link normal?
NO
Replace IC Link
YES
Is control wire (CONT-L, CONT-R) bridge or poor contact?
NO
Reinstall control wire
YES
Are Mode Switches normal? (MSWA, MSWB, MSWC)
NO
Resolder
YES
motor or mechanical defects
YES
Is cassette tape inserted at fully tape top?
YES
Is Top Senser signal correctly input to MICON?
NO
Repair for normal signal input
YES
reel motor defects
NO
Is it REW after SHORT FF?
YES
Is Top Senser signal correctly input to MICON?
NO
Repair for normal signal input
YES
reel motor defects
NO
reel motor, control motor or threading motor defects


ERROR-2 Capstan and Drum Trouble
Is power satisfied all of specified value?
NO
Adjust the power to specified value
YES
Is it error in auto stop at tape beginning when REW?
YES
Is Top Senser signal correctly input to MICON?
NO
Repair for normal signal's input
YES
reel motor, control motor or threading motor defects
NO
Is capstan or drum motor rotating?
YES
Are SWPLS and CAPFG correctly input to MICON?
NO
Correctly input SWPLS and CAPFG to MICON
NO
YES
Is Drum Control signal correctly transmitting to driver?
NO
Transmit Drum Control signal to driver
YES
Are DFG and DPG correctly transmitting to servo IC?
NO
Input DFG and DPG to servo IC
YES
drum or capstan motor defects.


ERROR-3
Cassette-up Compartment
System Error
Is power satisfied all of specified value?
NO
Adjust the power to specified value
YES
Is Cassette-up Compartment normal?
NO
Cassette-up Compartment defects
YES
Is Cassette-up Compartment Motor normal?
NO
Cassette-up Compartment Motor defects
YES
Are Control wires (C-UP and C-DOWN) normal?
NO
Repair control wires
YES
mechanical switch signals (C-IN, C-DOWN) defect


ERROR-4
ATF and Mechanical Control Communication Errors
Is power satisfied all of specified value?
NO
Adjust the power to specified value
YES
Is error displaying on?
NO
ATF and Mechanical Control communication error happened a moment. No problem.
YES
Is ATF Control or around IC poor contact or bridge?
NO
Resolder
YES
Mechanical Control or ATF Control Defects


ERROR-5
M1 and Core Deck communication errors
Is power satisfied all of specified value?
NO
Adjust the power to specified value
YES
Is error displaying on after pressing EJECT key?
NO
M1 and Core Deck communication errors happened a moment. No problem.
YES
Are Core Deck's connectors (CN904, 903) or SY's Board connectors (CN513,514) securely connected ?
YES
Insert the connectors securly.
NO
M3 MICON or Mode control defects

2-17. TIMING CHART

Movement modes about ※ 1 through ※ 6 in the Timing Chart are shown by these tables.

※ 1 : Control Motor Control

Control Motor Rotating Direction	CONT L ←——→ CONT R (clokcwise direction) (counterclockwise direction)								
Control Position (code) Control Switch Input	EJECT (4)	BLANK (7)	LOAD/ UNLOAD (2)	BLANK (7)	FF/REW (6)	BLANK (7)	STOP (3)	BLANK (7)	FWD (1)
CONT C (IC003 ⑭)	H	H	L	H	H	H	L	H	L
CONT B (IC003 ⑬)	L	H	H	H	H	H	H	H	L
CONT A (IC003 ⑫)	L	H	L	H	L	H	H	H	H

※ 2 : Loading Motor Control

Control Motor Rotating Direction	Unthreading ←——→ Threading								
Motor Position (code) Loading Switch Input	LOADING TOP (1)	BLANK (7)	UNLOAD WAIT (5)	BLANK (7)	DRUM START (4)	BLANK (7)	T REEL START (6)	BLANK (7)	LOADING END (3)
LOAD SW C (IC003 ⑱)	L	H	H	H	H	H	H	H	L
LOAD SW B (IC003 ⑰)	L	H	L	H	L	H	H	H	H
LOAD SW A (IC003 ⑯)	H	H	H	H	L	H	L	H	H

※3 : Casecon Motor Control Output

UP	DOWN	Motor Drive
L	L	No drive
L	H	Drives in down direction
H	L	Drives in up direction
H	H	Short brake

※ 4 : Loading Motor Control Output

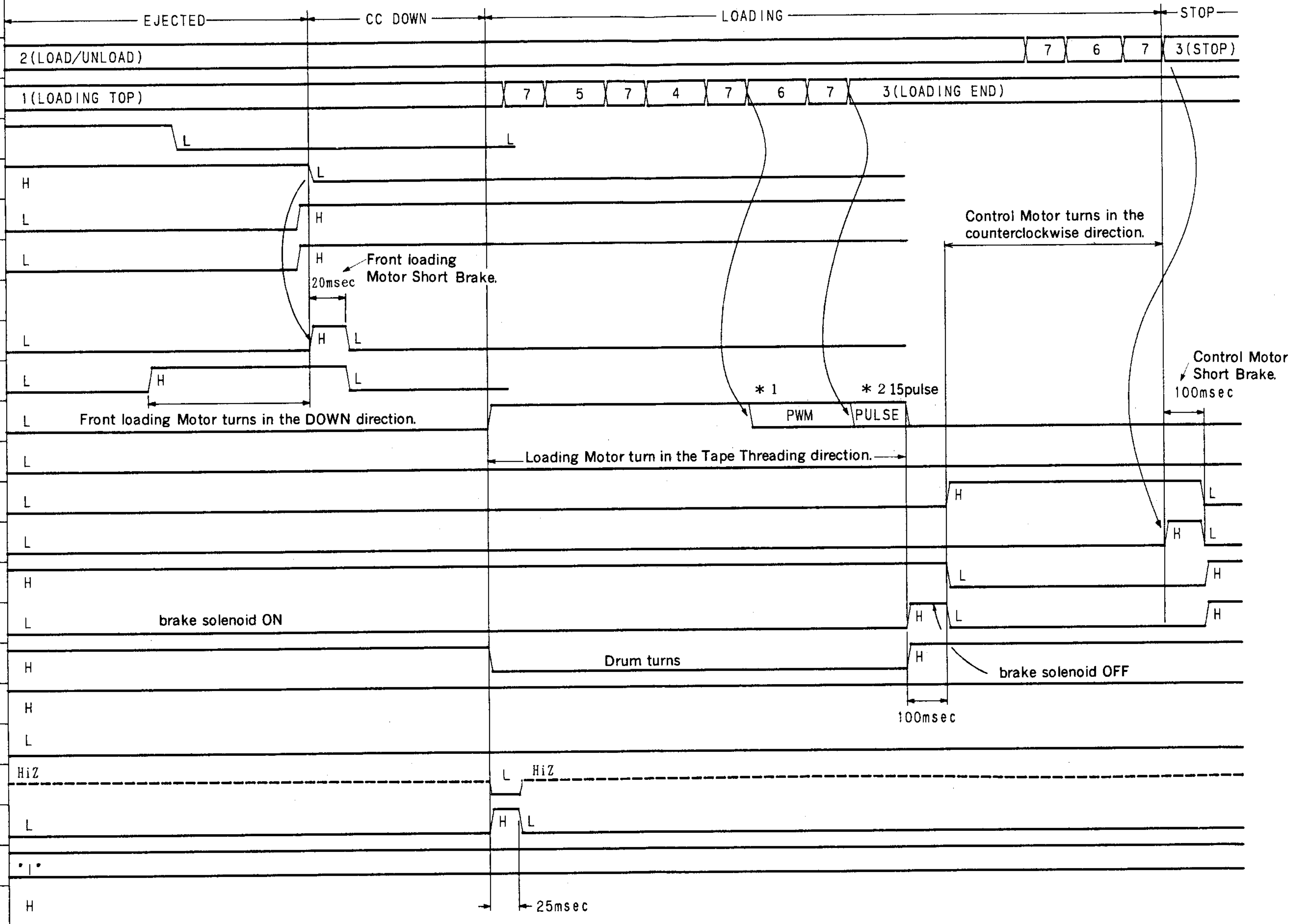
LOAD	UNLOAD	Motor Drive
L	L	No drive
L	H	Drives in unloading direction
H	L	Drives in loading direction
H	H	Short brake

※ 5 : Control Motor Output

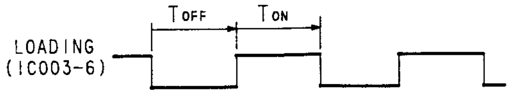
CONT L	CONT R	Motor Drive
L	L	No drive
L	H	Drives the slider at a control position to the right
H	L	Drives the slider at a control position to the left
H	H	Short brake

1. EJECTED → CC DOWN → LOADING → STOP

SIGNAL	L	H	MEASURING POINT SE-10P BOARD (PIN NO)
MODE SW A,B,C	※1		IC003-12,13,14
LOADING SW A,B,C	※2		IC003-16,17,18
CASSETTE IN	ON	OFF	IC003-46
CASSETTE DOWN	ON	OFF	IC003-47
TAPE TOP	ON	OFF	IC003-54
TAPE END	ON	OFF	IC003-55
DRM ROT	ON	OFF	IC003-61, 62, 63
CASECON UP	※3		IC003-8
CASECON DOWN			IC003-9
LOADING	※4		IC003-6
UNLOADING			IC003-7
CONTROL R	※5		IC003-20
CONTROL L			IC003-21
START	ON	OFF	IC003-22
HOLD	ON	OFF	IC003-23
DRUM ON	ON	OFF	IC002-8
CAPSTAN ON	ON	OFF	IC002-4
CAPSTAN FWD/$\overline{\text{RVS}}$	FWD	RVS	IC002-5
REEL $\overline{\text{FWD}}$/RVS	FWD	RVS	IC002-60
REEL BRAKE	ON	OFF	IC002-62
CAPSTAN SPEED	——		IC002-16to20
CUE	CUE	STOP	IC002-51
REV	REV	STOP	IC002-52
SLOW	NOT SLOW	SLOW	IC002-22
AUTO (HEAD SWITCHING)	obey MPU	obey RF	IC002-38
ATF CS (MPU COMMUNICATION)	COMMUNICATION OK	STOP	IC002-43
RP PB MODE	REC	PB EE(STOP)	IC002-44
FLYING ERASE ON	ON	OFF	IC002-29
JOG	NORMAL PB	variable speed playback	IC002-9


EJECTED
CC DOWN
LOADING
STOP
2(LOAD/UNLOAD)
7
6
7
3(STOP)
1(LOADING TOP)
7
5
7
4
7
6
7
3(LOADING END)
L
H
L
H
L
H
20msec
Front loading Motor Short Brake.
Control Motor turns in the counterclockwise direction.
H
L
H
L
Front loading Motor turns in the DOWN direction.
＊1
＊2 15pulse
PWM
PULSE
Control Motor Short Brake.
100msec
Loading Motor turn in the Tape Threading direction.
H
L
H
L
brake solenoid ON
Drum turns
H
brake solenoid OFF
100msec
HiZ
L
HiZ
H
L
"I"
25msec
"STOP"

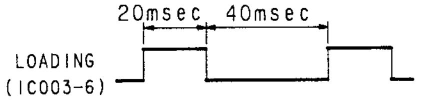
＊1 Loading Motor PWM Driving from T Reel Start position to LOADING END position.


TOFF
TON
LOADING
(IC003-6)

T OFF=28msec ----- fix
T ON=(28-n)msec n=0, 1, 2, . . 18

PWM Driving is ended when it becames LOADING END position on the way.

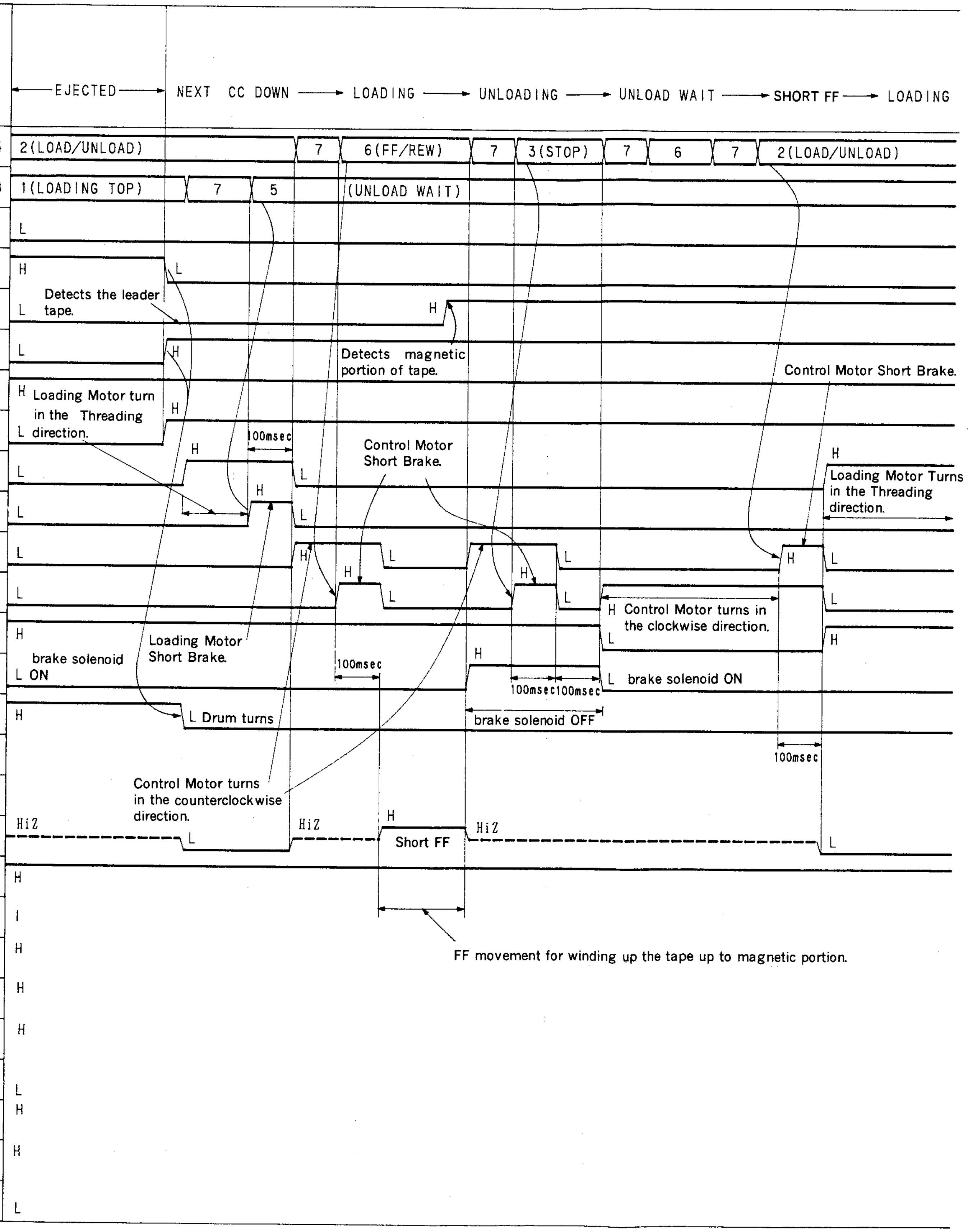
＊2 Loading Motor pulse driving in the LOADING END.


20msec
40msec
LOADING
(IC003-6)

Drives for fifteen pulse since it becomes LOADING END position.

2. EJECTED → CC DOWN → LOADING → UNLOADING → UNLOAD WAIT → SHORT FF → LOADING

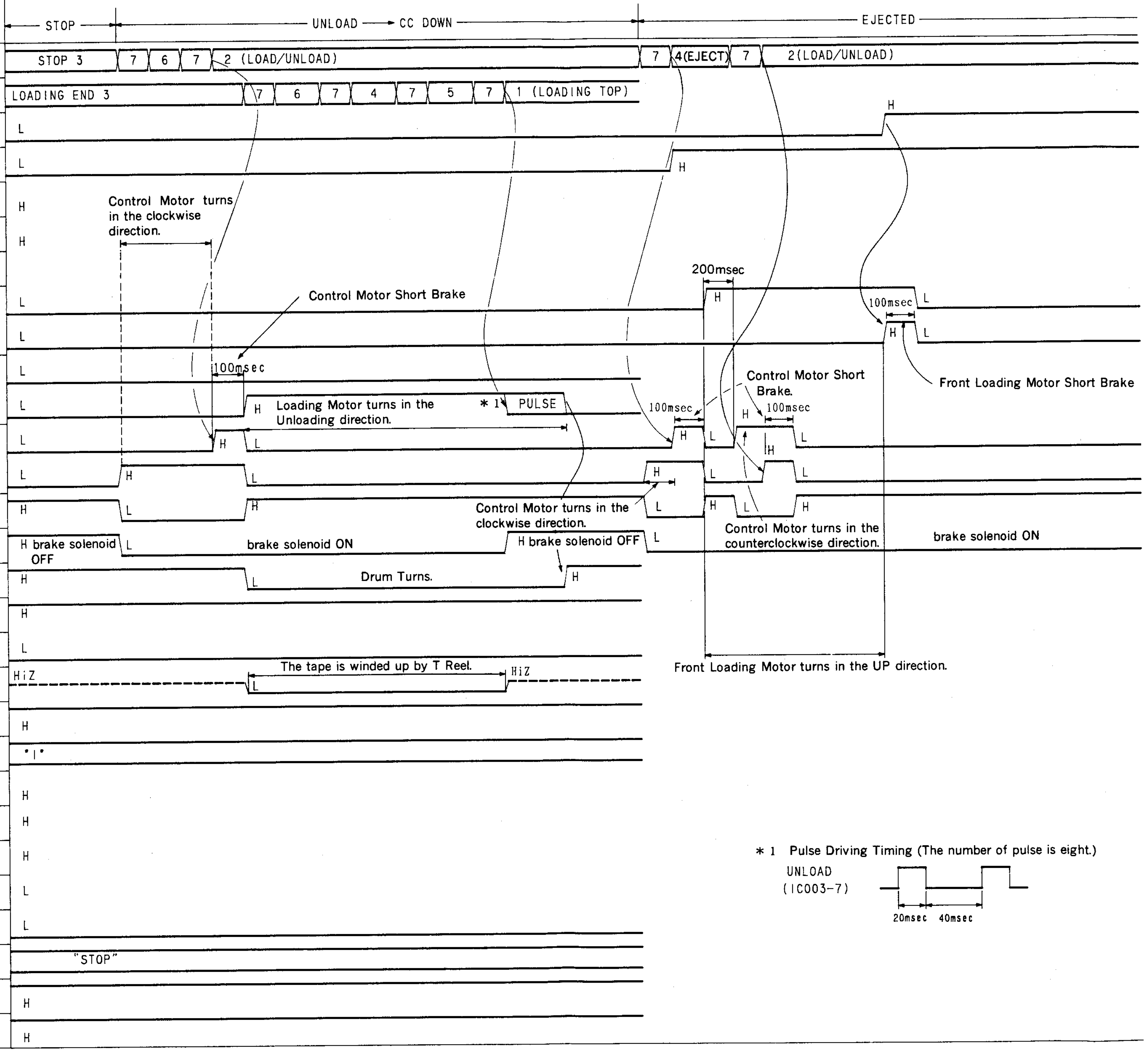
SIGNAL	L	H	MEASURING POINT SE-10P BOARD (PIN NO)
MODE SW A,B,C	※1		IC003-12,13,14
LOADING SW A,B,C	※2		IC003-16,17,18
CASSETTE IN	ON	OFF	IC003-46
CASSETTE DOWN	ON	OFF	IC003-47
TAPE TOP	ON	OFF	IC003-54
TAPE END	ON	OFF	IC003-55
CASECON UP	※3		IC003-8
CASECON DOWN			IC003-9
LOADING	※4		IC003-6
UNLOADING			IC003-7
CONTROL R	※5		IC003-20
CONTROL L			IC003-21
START	ON	OFF	IC003-22
HOLD	ON	OFF	IC003-23
DRUM ON	ON	OFF	IC002-8
CAPSTAN ON	ON	OFF	IC002-4
CAPSTAN $\overline{\text{FWD}}$/RVS	FWD	RVS	IC002-5
REEL $\overline{\text{FWD}}$/RVS	FWD	RVS	IC002-60
REEL BRAKE	ON	OFF	IC002-62
CAPSTAN SPEED	——		IC002-16to20
CUE	CUE	STOP	IC002-51
REV	REV	STOP	IC002-52
SLOW	NOT SLOW	SLOW	IC002-22
AUTO (HEAD SWITCHING)	obey MPU	obey RF	IC002-38
RP PB MODE	REC	PB EE(STOP)	IC002-44
FLYING ERASE ON	ON	OFF	IC002-29
JOG	NORMAL PB	Variable Speed playback	IC002-9



←EJECTED→ NEXT CC DOWN → LOADING → UNLOADING → UNLOAD WAIT → SHORT FF → LOADING
2(LOAD/UNLOAD)
7
6(FF/REW)
7
3(STOP)
7
6
7
2(LOAD/UNLOAD)
1(LOADING TOP)
7
5
(UNLOAD WAIT)
L
H
L
Detects the leader tape.
L
H
L
H
Detects magnetic portion of tape.
Control Motor Short Brake.
H Loading Motor turn in the Threading direction.
H
L
100msec
Control Motor Short Brake.
H
L
H
L
H
Loading Motor Turns in the Threading direction.
L
H
L
H
L
H
H
L
L
H
L
L
H Control Motor turns in the clockwise direction.
L
H
H
Loading Motor Short Brake.
brake solenoid ON
L
100msec
H
100msec 100msec
L brake solenoid ON
H
L Drum turns
brake solenoid OFF
100msec
Control Motor turns in the counterclockwise direction.
HiZ
L
HiZ
H
Short FF
HiZ
L
H
I
H
H
H
L
H
H
L
FF movement for winding up the tape up to magnetic portion.

3. STOP → UNLOAD → CC DOWN → EJECTED

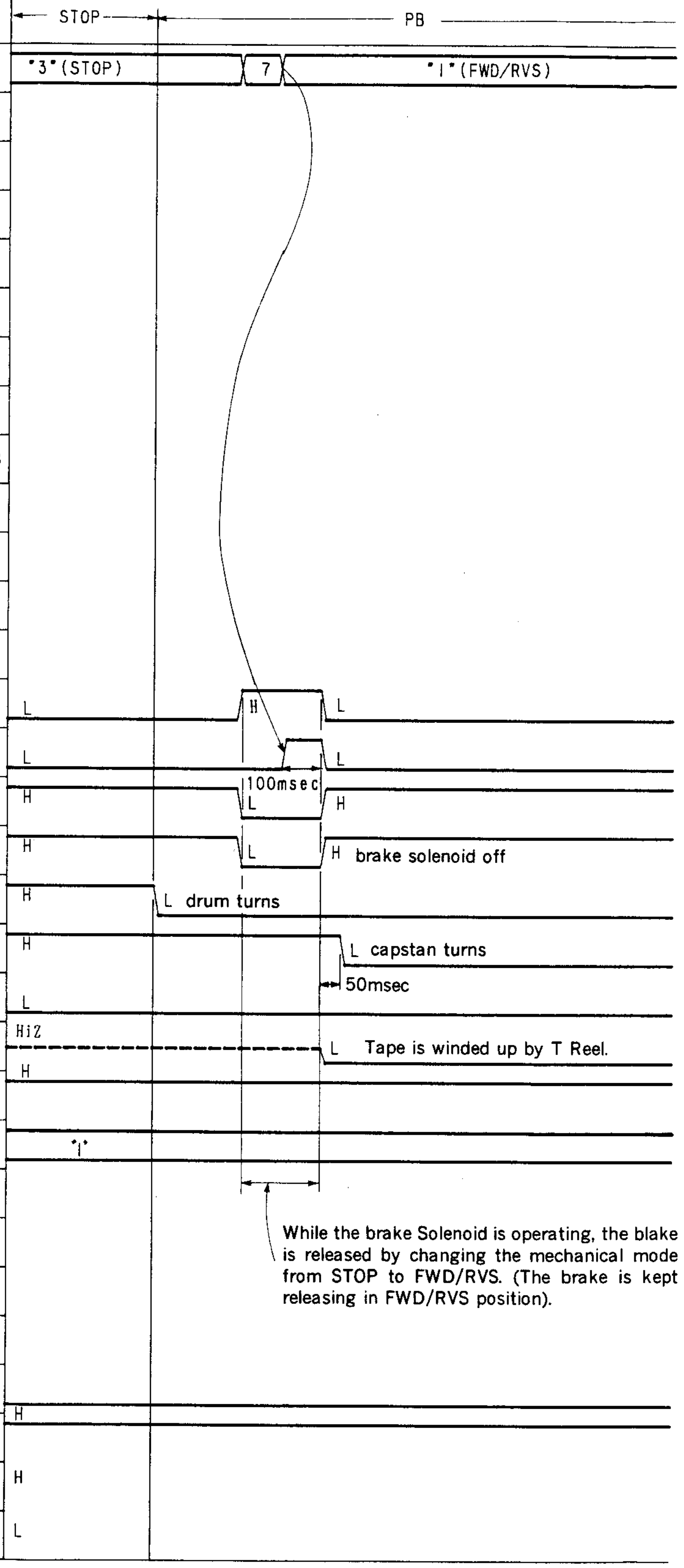
SIGNAL	L	H	MEASURING POINT SE-10P BOARD (PIN NO)
MODE SW A,B,C	※1		IC003-12,13,14
LOADING SW A,B,C	※2		IC003-16,17,18
CASSETTE IN	ON	OFF	IC003-46
CASSETTE DOWN	ON	OFF	IC003-47
TAPE TOP	ON	OFF	IC003-54
TAPE END	ON	OFF	IC003-55
DRM ROT	ON	OFF	IC003-61, 62, 63
CASECON UP	※3		IC003-8
CASECON DOWN			IC003-9
LOADING	※4		IC003-6
UNLOADING			IC003-7
CONTROL R	※5		IC003-20
CONTROL L			IC003-21
START	ON	OFF	IC003-22
HOLD	ON	OFF	IC003-23
DRUM ON	ON	OFF	IC002-8
CAPSTAN ON	ON	OFF	IC002-4
CAPSTAN FWD/RVS	FWD	RVS	IC002-5
REEL FWD/RVS	ON	OFF	IC002-60
REEL BRAKE	ON	OFF	IC002-62
CAPSTAN SPEED	———		IC002-16to20
CUE	CUE	STOP	IC002-51
REV	REV	STOP	IC002-52
SLOW	NOT SLOW	SLOW	IC002-22
AUTO (HEAD SWITCHING)	obey MPU	obey RF	IC002-38
ATF CS (MPU COMMUNICATION)	COMMUNICATION OK	STOP	IC002-43
RP PB MODE	REC	PB EE(STOP)	IC002-44
FLYING ERASE ON	ON	OFF	IC002-29
JOG	NORMAL PB	Variable speed playback	IC002-9


STOP
UNLOAD → CC DOWN
EJECTED
STOP 3
7
6
7
2 (LOAD/UNLOAD)
4(EJECT)
2(LOAD/UNLOAD)
LOADING END 3
5
1 (LOADING TOP)
L
H
Control Motor turns in the clockwise direction.
Control Motor Short Brake
100msec
Loading Motor turns in the Unloading direction.
* 1 PULSE
200msec
Control Motor Short Brake.
Front Loading Motor Short Brake
Control Motor turns in the clockwise direction.
Control Motor turns in the counterclockwise direction.
H brake solenoid OFF
brake solenoid ON
Drum Turns.
Front Loading Motor turns in the UP direction.
HiZ
The tape is winded up by T Reel.
"1"
"STOP"
UNLOAD (IC003-7)
20msec
40msec

* 1 Pulse Driving Timing (The number of pulse is eight.)

4. STOP → PB

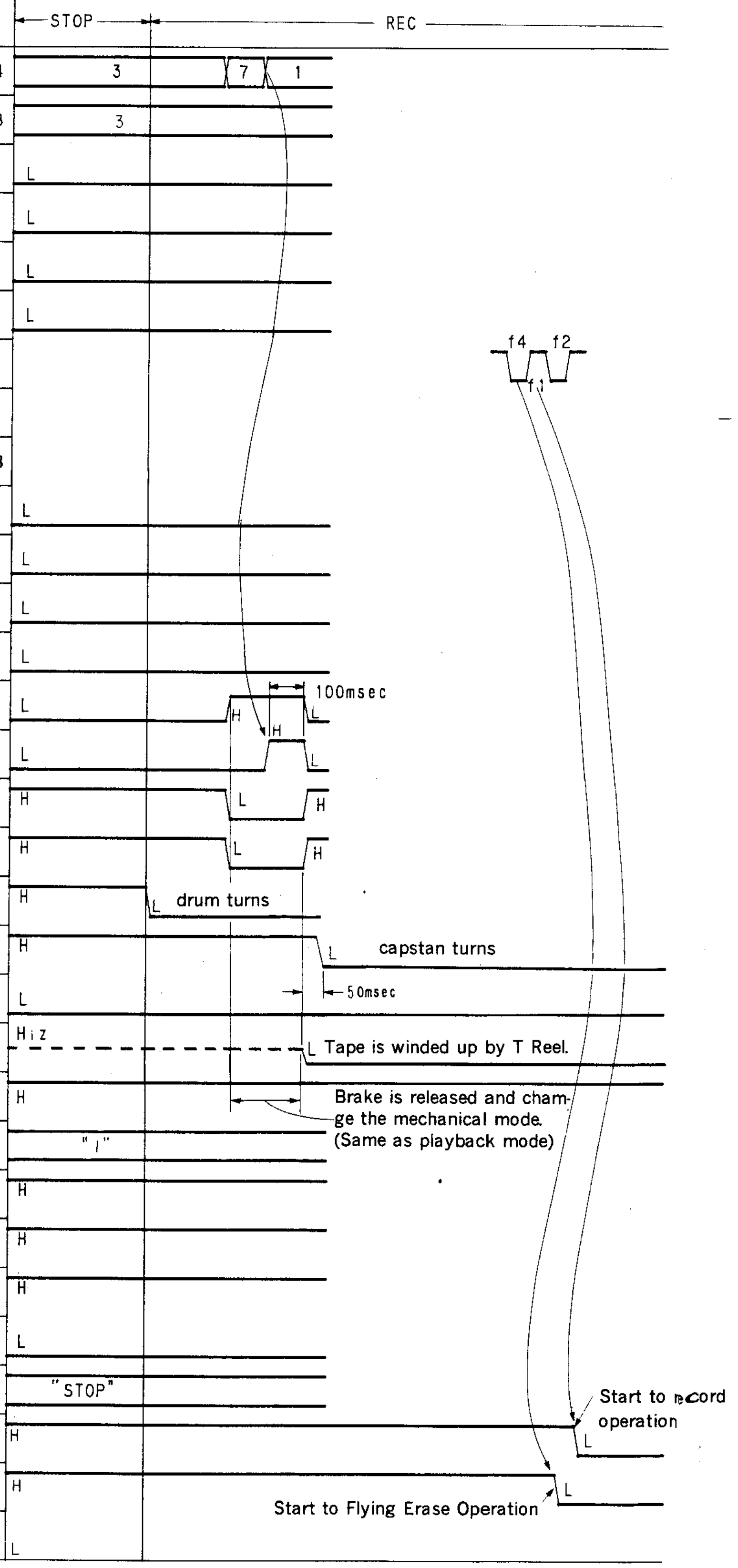
SIGNAL	L	H	MEASURING POINT SE-10P BOARD (PIN NO)
MODE SW A,B,C	※1		IC003-12,13,14
LOADING SW A,B,C	※2		IC003-16,17,18
CASSETTE IN	ON	OFF	IC003-46
CASSETTE DOWN	ON	OFF	IC003-47
TAPE TOP	ON	OFF	IC003-54
TAPE END	ON	OFF	IC003-55
RF SW PULSE			IC002-48,49 IC003-48,49
CAPSTAN FG			IC002-40
DRM ROT	ON	OFF	IC003-61, 62, 63
CASECON UP	※3		IC003-8
CASECON DOWN			IC003-9
LOADING	※4		IC003-6
UNLOADING			IC003-7
CONTROL R	※5		IC003-20
CONTROL L			IC003-21
START	ON	OFF	IC003-22
HOLD	ON	OFF	IC003-23
DRUM ON	ON	OFF	IC002-8
CAPSTAN ON	ON	OFF	IC002-4
CAPSTAN $\overline{\text{FWD}}$/RVS	FWD	RVS	IC002-5
REEL $\overline{\text{FWD}}$/RVS	FWD	RVS	IC002-60
REEL BRAKE	ON	OFF	IC002-62
CAPSTAN SPEED	———		IC002-16to20
CUE	CUE	STOP	IC002-51
REV	REV	STOP	IC002-52
SLOW	NOT SLOW	SLOW	IC002-22
AUTO (HEAD SWITCHING)	obey MPU	obey RF	IC002-38
ATF CS (MPU COMMUNICATION)	COMMUNICATION OK	STOP	IC002-43
RP PB MODE	REC	PB EE(STOP)	IC002-44
FLYING ERASE ON	ON	OFF	IC002-29
JOG	NORMAL PB	Variable speed playback	IC002-9


STOP
PB
"3"(STOP)
7
"1"(FWD/RVS)
L
H
L
L
L
100msec
H
L
H
H
L
H brake solenoid off
H
L drum turns
H
L capstan turns
50msec
L
Hiz
L Tape is winded up by T Reel.
H
"1"
H

While the brake Solenoid is operating, the blake is released by changing the mechanical mode from STOP to FWD/RVS. (The brake is kept releasing in FWD/RVS position).

5. STOP → REC

SIGNAL	L	H	MEASURING POINT SE-10P BOARD (PIN NO)
MODE SW A,B,C	※1		IC003-12,13,14
LOADING SW A,B,C	※2		IC003-16,17,18
CASSETTE IN	ON	OFF	IC003-46
CASSETTE DOWN	ON	OFF	IC003-47
TAPE TOP	ON	OFF	IC003-54
TAPE END	ON	OFF	IC003-55
RF SW PULSE			IC002-48,49 IC003-48,49
CAPSTAN FG			IC002-40
DRM ROT	ON	OFF	IC003-61, 62, 63
CASECON UP	※3		IC003-8
CASECON DOWN			IC003-9
LOADING	※4		IC003-6
UNLOADING			IC003-7
CONTROL R	※5		IC003-20
CONTROL L			IC003-21
START	ON	OFF	IC003-22
HOLD	ON	OFF	IC003-23
DRUM ON	ON	OFF	IC002-8
CAPSTAN ON	ON	OFF	IC002-4
CAPSTAN $\overline{\text{FWD}}$/RVS	FWD	RVS	IC002-5
REEL $\overline{\text{FWD}}$/RVS	FWD	RVS	IC002-60
REEL BRAKE	ON	OFF	IC002-62
CAPSTAN SPEED	———		IC002-16to20
CUE	CUE	STOP	IC002-51
REV	REV	STOP	IC002-52
SLOW	NOT SLOW	SLOW	IC002-22
AUTO (HEAD SWITCHING)	obey MPU	obey RF	IC002-38
ATF CS (MPU COMMUNICATION)	COMMUNICATION OK	STOP	IC002-43
RP PB MODE	REC	PB EE(STOP)	IC002-44
FLYING ERASE ON	ON	OFF	IC002-29
JOG	NORMAL PB	Variable speed playback	IC002-9


STOP
REC
3
7
1
3
L
L
L
L
f4
f2
f1
L
L
L
L
100msec
L
H
H
L
L
L
H
L
H
H
L
H
H
L drum turns
H
L capstan turns
L
50msec
Hiz
L Tape is winded up by T Reel.
H
"1"
H
H
H
L
"STOP"
H
L
H
L
L

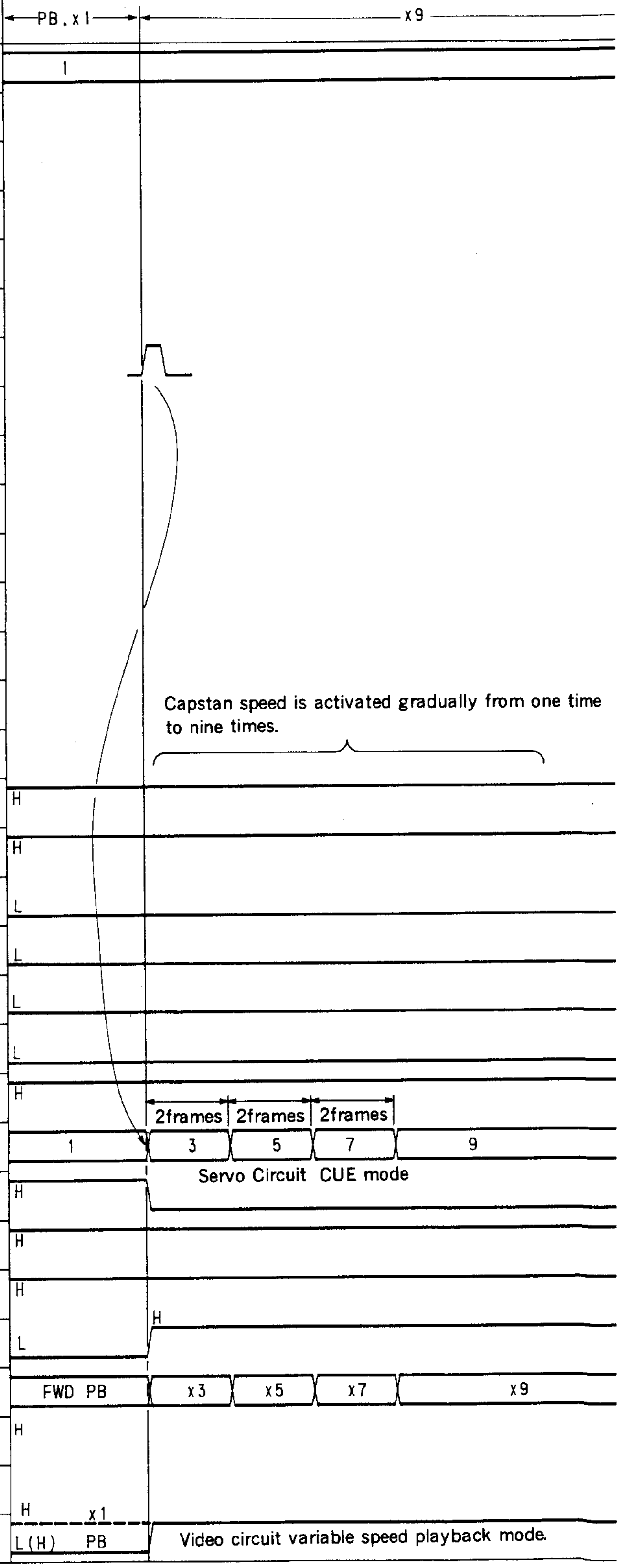
Brake is released and chamge the mechanical mode. (Same as playback mode)

Start to record operation

Start to Flying Erase Operation

6. PB, X1 → X9

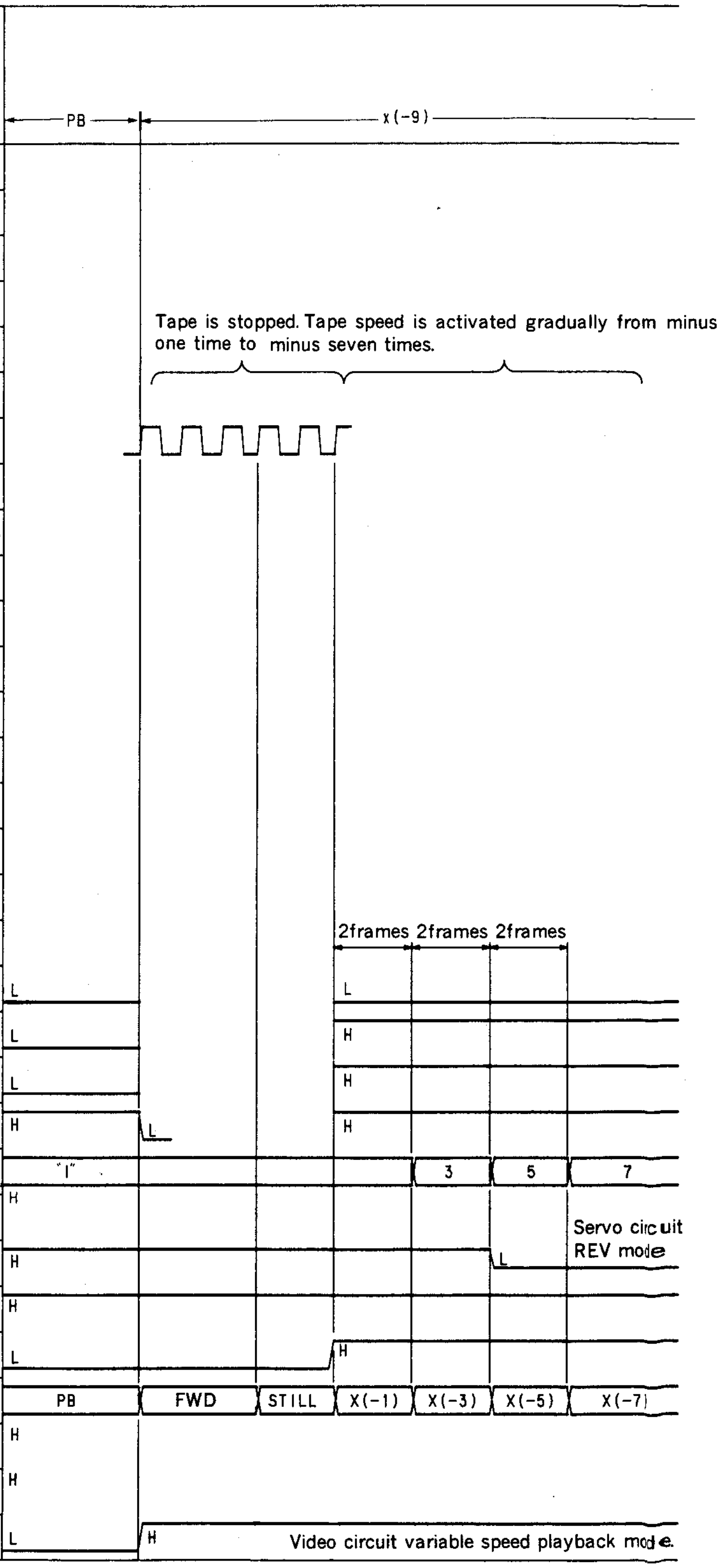
SIGNAL	L	H	MEASURING POINT SE-10P BOARD (PIN NO)
MODE SW A,B,C	※1		IC003-12,13,14
LOADING SW A,B,C	※2		IC003-16,17,18
CASSETTE IN	ON	OFF	IC003-46
CASSETTE DOWN	ON	OFF	IC003-47
TAPE TOP	ON	OFF	IC003-54
TAPE END	ON	OFF	IC003-55
RF SW PULSE			IC002-48,49 IC003-48,49
CAPSTAN FG			IC002-40
DRM ROT	ON	OFF	IC003-61, 62, 63
CASECON UP	※3		IC003-8
CASECON DOWN			IC003-9
LOADING	※4		IC003-6
UNLOADING			IC003-7
CONTROL R	※5		IC003-20
CONTROL L			IC003-21
START	ON	OFF	IC003-22
HOLD	ON	OFF	IC003-23
DRUM ON	ON	OFF	IC002-8
CAPSTAN ON	ON	OFF	IC002-4
CAPSTAN $\overline{\text{FWD}}$/RVS	FWD	RVS	IC002-5
REEL $\overline{\text{FWD}}$/RVS	FWD	RVS	IC002-60
$\overline{\text{REEL BRAKE}}$	ON	OFF	IC002-62
CAPSTAN SPEED	———		IC002-16to20
CUE	CUE	STOP	IC002-51
REV	REV	STOP	IC002-52
SLOW	NOT SLOW	SLOW	IC002-22
AUTO (HEAD SWITCHING)	obey MPU	obey RF	IC002-38
ATF CS (MPU COMMUNICATION)	COMMUNICATION OK	STOP	IC002-43
RP PB MODE	REC	PB EE(STOP)	IC002-44
FLYING ERASE ON	ON	OFF	IC002-29
JOG	NORMAL PB	Variable speed playback	IC002-9


PB.x1
x9
1
H
H
L
L
L
L
H
2frames
2frames
2frames
1
3
5
7
9
Servo Circuit CUE mode
H
H
H
H
L
FWD PB
x3
x5
x7
x9
H
H
x1
L(H) PB
Video circuit variable speed playback mode.

Capstan speed is activated gradually from one time to nine times.

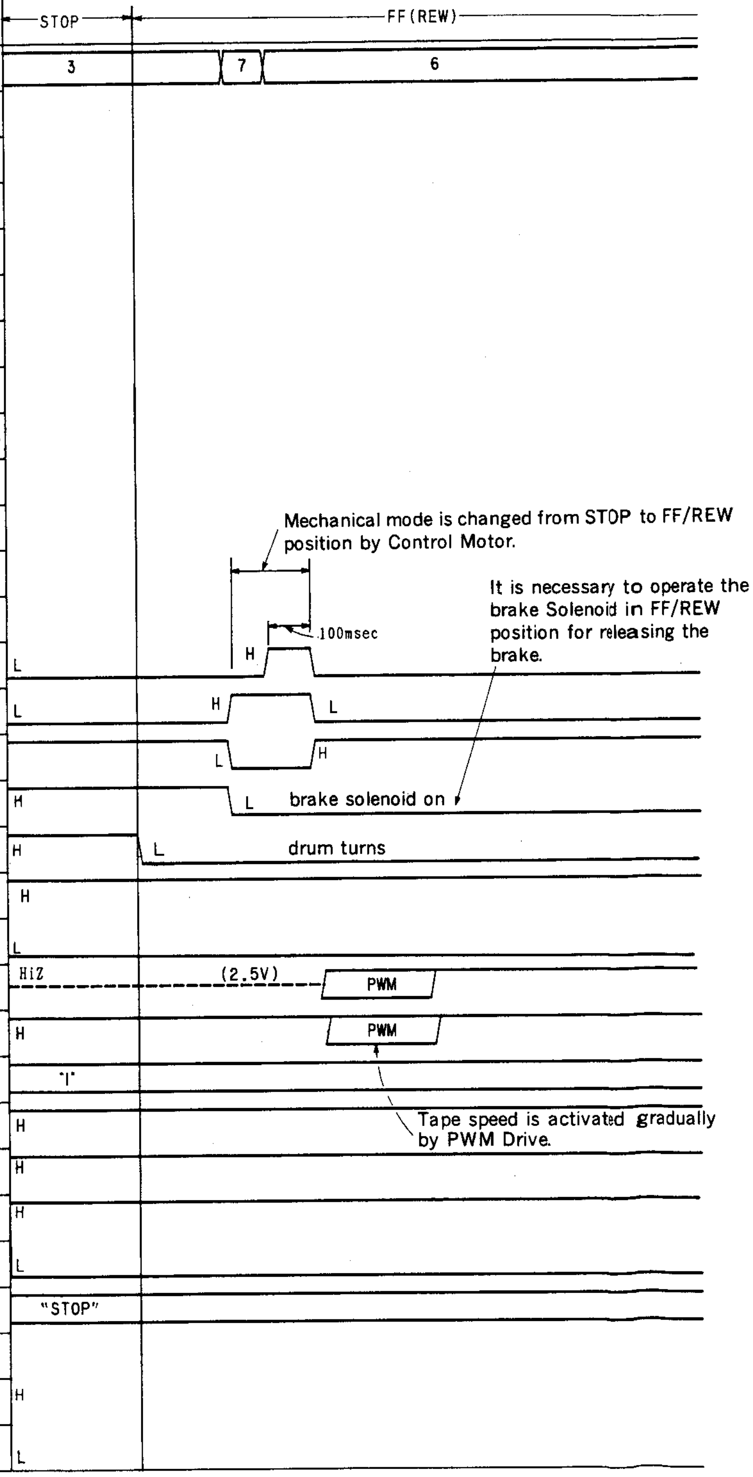
7. PB → X (−9)

SIGNAL	L	H	MEASURING POINT SE-10P BOARD (PIN NO)
MODE SW A,B,C	※1		IC003-12,13,14
LOADING SW A,B,C	※2		IC003-16,17,18
CASSETTE IN	ON	OFF	IC003-46
CASSETTE DOWN	ON	OFF	IC003-47
TAPE TOP	ON	OFF	IC003-54
TAPE END	ON	OFF	IC003-55
RF SW PULSE			IC002-48,49 IC003-48,49
CAPSTAN FG			IC002-40
DRM ROT	ON	OFF	IC003-61, 62, 63
CASECON UP	※3		IC003-8
CASECON DOWN			IC003-9
LOADING	※4		IC003-6
UNLOADING			IC003-7
CONTROL R	※5		IC003-20
CONTROL L			IC003-21
START	ON	OFF	IC003-22
HOLD	ON	OFF	IC003-23
DRUM ON	ON	OFF	IC002-8
CAPSTAN ON	ON	OFF	IC002-4
CAPSTAN $\overline{\text{FWD}}$/RVS	FWD	RVS	IC002-5
REEL $\overline{\text{FWD}}$/RVS	FWD	RVS	IC002-60
REEL BRAKE	ON	OFF	IC002-62
CAPSTAN SPEED	———		IC002-16to20
CUE	CUE	STOP	IC002-51
REV	REV	STOP	IC002-52
SLOW	NOT SLOW	SLOW	IC002-22
AUTO (HEAD SWITCHING)	obey MPU	obey RF	IC002-38
ATF CS (MPU COMMUNICATION)	COMMUNICATION OK	STOP	IC002-43
RP PB MODE	REC	PB EE(STOP)	IC002-44
FLYING ERASE ON	ON	OFF	IC002-29
JOG	NORMAL PB	Variable speed playback	IC002-9


PB
x(-9)
Tape is stopped. Tape speed is activated gradually from minus one time to minus seven times.
2frames 2frames 2frames
L
L
L
H
L
H
H
H
L
H
"I"
3
5
7
H
H
L
Servo circuit REV mode
H
L
H
PB
FWD
STILL
X(-1)
X(-3)
X(-5)
X(-7)
H
H
L
H
Video circuit variable speed playback mode.

8. STOP → FF (REW)

SIGNAL	L	H	MEASURING POINT SE–10P BOARD (PIN NO)
MODE SW A,B,C	※1		IC003-12,13,14
LOADING SW A,B,C	※2		IC003-16,17,18
CASSETTE IN	ON	OFF	IC003-46
CASSETTE DOWN	ON	OFF	IC003-42,47
TAPE TOP	ON	OFF	IC003-54
TAPE END	ON	OFF	IC003-55
RF SW PULSE			IC002-48,49 IC003-48,49
CAPSTAN FG			IC002-40
DRM ROT	ON	OFF	IC003-61, 62, 63
CASECON UP	※3		IC003-8
CASECON DOWN			IC003-9
LOADING	※4		IC003-6
UNLOADING			IC003-7
CONTROL R	※5		IC003-20
CONTROL L			IC003-21
START	ON	OFF	IC003-22
HOLD	ON	OFF	IC003-23
DRUM ON	ON	OFF	IC002-8
CAPSTAN ON	ON	OFF	IC002-4
CAPSTAN $\overline{\text{FWD}}$/RVS	FWD	RVS	IC002-5
REEL $\overline{\text{FWD}}$/RVS	FWD	RVS	IC002-60
REEL BRAKE	ON	OFF	IC002-62
CAPSTAN SPEED	※6		IC002-16to20
CUE	CUE	REV	IC002-51
REV	REV	STOP	IC002-52
SLOW	NOT SLOW	SLOW	IC002-22
AUTO (HEAD SWITCHING)	obey MPU	obey RF	IC002-38
ATF CS (MPU COMMUNICATION)	COMMUNICATION OK	STOP	IC002-43
RP PB MODE	REC	PB EE(STOP)	IC002-44
FLYING ERASE ON	ON	OFF	IC002-29
JOG	NORMAL PB	Variable speed playback	IC002-9



Mechanical mode is changed from STOP to FF/REW position by Control Motor.

It is necessary to operate the brake Solenoid in FF/REW position for releasing the brake.

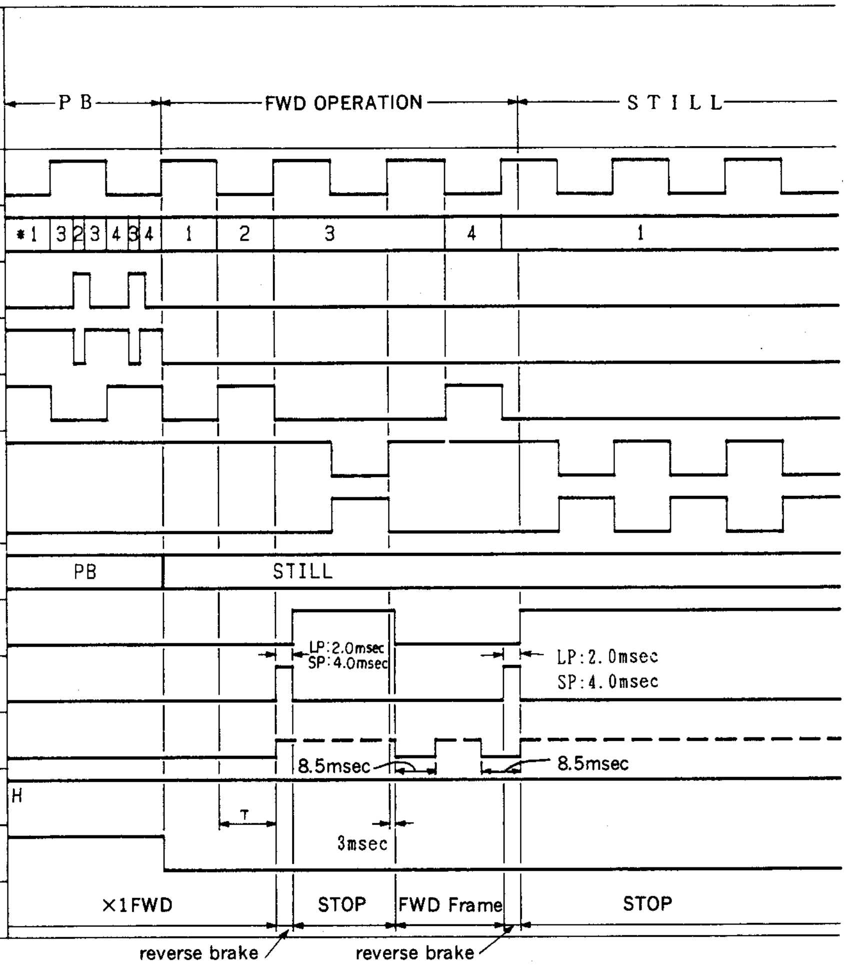
brake solenoid on

drum turns

Tape speed is activated gradually by PWM Drive.

9. PB → STILL

SIGNAL	L	H	MEASURING POINT SE-10P BOARD (PIN NO)
RF SW PULSE	——		IC003-48, 49
REF PILOT	※1		——
TSA	SAMPL-ING	HOLD	IC003-4
TSB	SAMPL-ING	HOLD	IC003-5
SEL16	16kHz	47kHz	IC003-2
H CHG	H;SP HEAD L;LP HEAD		IC003-3
SERVO DATA	——		IC003-60
CAPSTAN ON	ON	OFF	IC002-4
CAP FWD/RVS	FWD	RVS	IC002-5
REEL FWD/RVS	FWD	RVS	IC002-60
REEL BRAKE	BRAKE	OFF	IC002-62
PB PAUSE	PB PAUSE	NOT PB PAUSE	IC002-23
CAPSTAN OPERATION			


P B
FWD OPERATION
S T I L L
*1
3
2
3
4
3
4
1
2
3
4
1
PB
STILL
LP:2.0msec
SP:4.0msec
LP:2.0msec
SP:4.0msec
8.5msec
8.5msec
H
T
3msec
×1FWD
STOP
FWD Frame
STOP
reverse brake
reverse brake

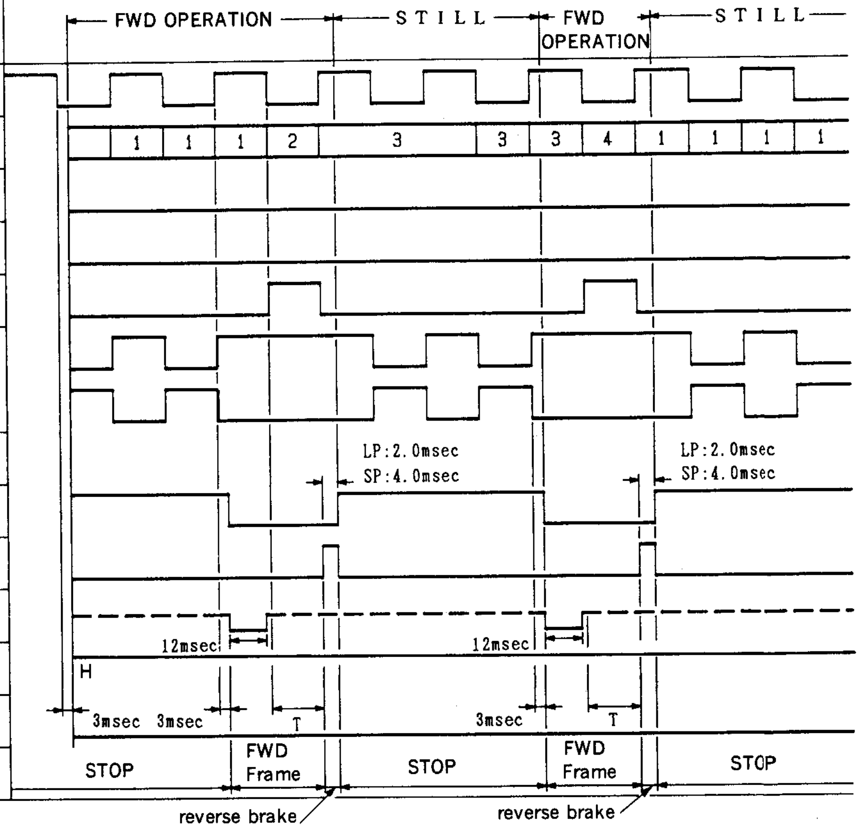
(*1) Selects the REF PILOT Frequency by SEL1 (IC003-(64)) and SEL2 (IC003-②).

T=5.0−21.0msec
Center 13.0msec

FREQUENCY	SEL1	SEL2
1	H	H
2	L	H
3	H	L
4	L	L

10. FWD SLOW or FWD FRAME

SIGNAL	L	H	MEASURING POINT SE-10P BOARD (PIN NO)
RF SW PULSE	—		IC003-48,49
REF PILOT	※1		—
TSA	SAMPL-ING	HOLD	IC003-4
TSB	SAMPL-ING	HOLD	IC003-5
SEL16	16kHz	47kHz	IC003-2
H CHG	H;SP HEAD L;LP HEAD		IC003-3
SERVO DATA	—		IC003-60
CAPSTAN ON	ON	OFF	IC002-4
CAP FWD/RVS	FWD	RVS	IC002-5
REEL FWD/RVS	FWD	RVS	IC002-60
REEL BRAKE	BRAKE	OFF	IC002-62
PB PAUSE	PB PAUSE	NOT PB PAUSE	IC002-23
CAPSTAN OPERATION			

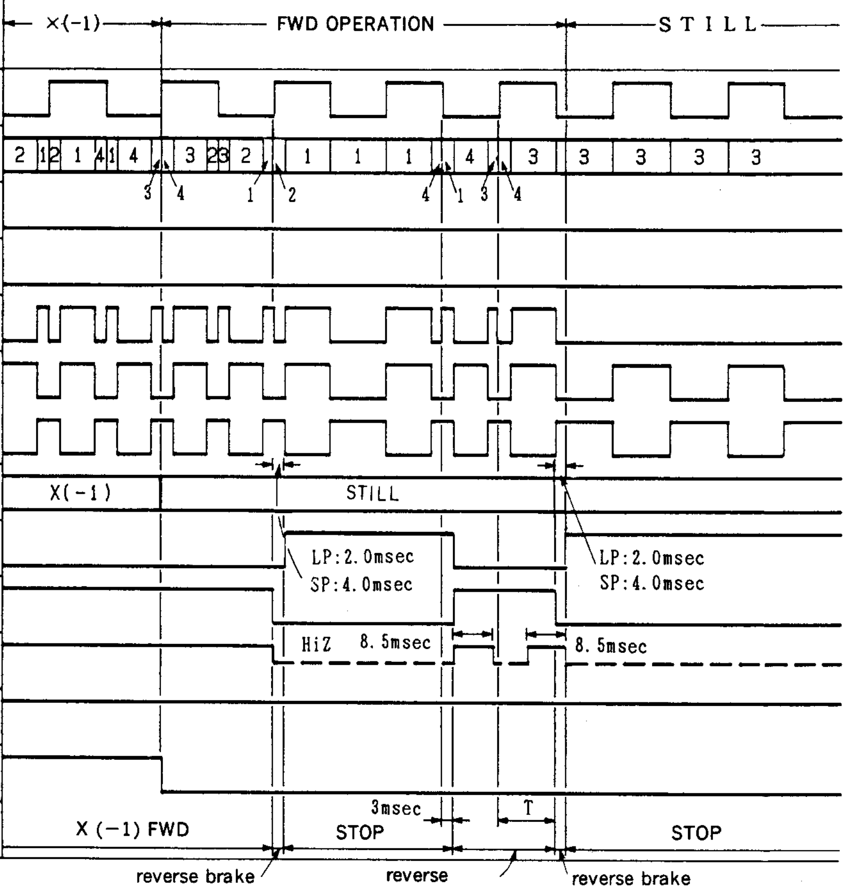

FWD OPERATION
STILL
FWD OPERATION
STILL
1
1
1
2
3
3
3
4
1
1
1
1
LP:2.0msec
SP:4.0msec
LP:2.0msec
SP:4.0msec
12msec
12msec
H
3msec
3msec
T
3msec
T
STOP
FWD Frame
STOP
FWD Frame
STOP
reverse brake
reverse brake
FWD operation
T=8.5−24.5msec
Center 16.5msec

(＊ 1) Selects the REF PILOT Frequency by SEL1 (IC003-(64)) and SEL2 (IC003-②).

FREQUENCY	SEL1	SEL2
1	H	H
2	L	L
3	H	L
4	L	L

11. X (−1) → STILL

SIGNAL	L	H	MEASURING POINT SE−10P BOARD (PIN NO)
RF SW PULSE	——		IC003-48, 49
REF PILOT	※1		——
TSA	SAMPL-ING	HOLD	IC003-4
TSB	SAMPL-ING	HOLD	IC003-5
SEL16	16kHz	47kHz	IC003-2
H CHG	H;SP HEAD		IC003-3
	L;LP HEAD		
SERVO DATA	——		IC003-60
CAPSTAN ON	ON	OFF	IC002-4
CAP FWD/RVS	FWD	RVS	IC002-5
REEL FWD/RVS	FWD	RVS	IC002-60
REEL BRAKE	BRAKE	OFF	IC002-62
PB PAUSE	PB PAUSE	NOT PB PAUSE	IC002-23
CAPSTAN OPERATION			

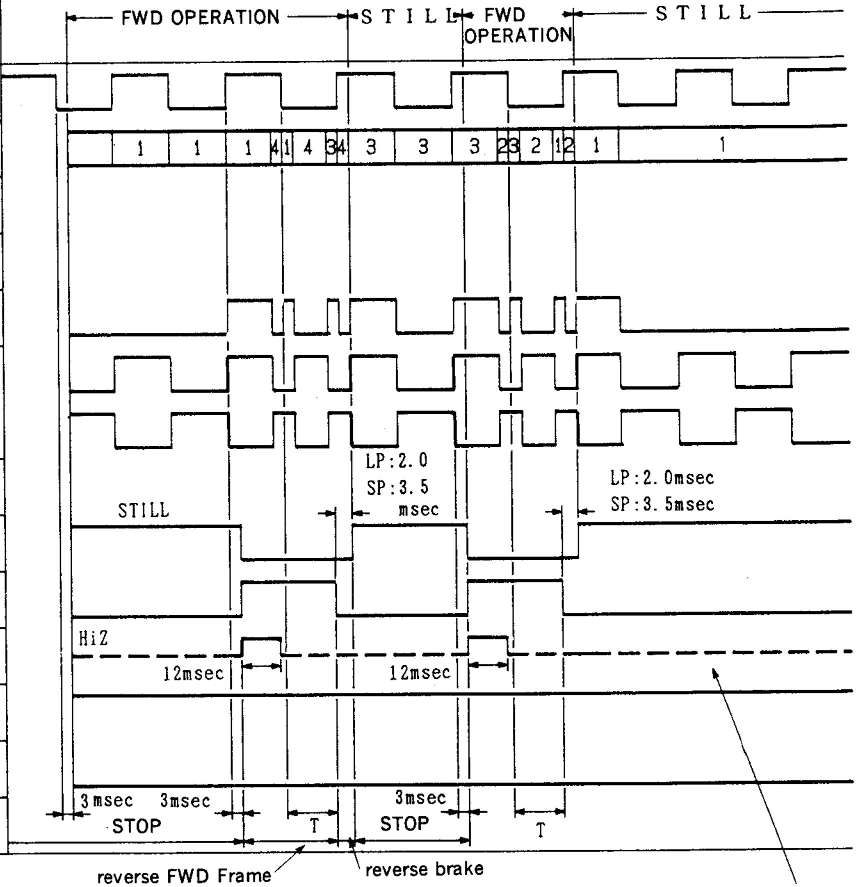

x(−1)
FWD OPERATION
S T I L L
2 1 2 1 4 1 4 3 2 3 2 1 1 1 4 3 3 3 3 3
3 4 1 2 4 1 3 4
X(−1)
STILL
LP:2.0msec
SP:4.0msec
LP:2.0msec
SP:4.0msec
HiZ
8.5msec
8.5msec
3msec
T
X (−1) FWD
STOP
STOP
reverse brake
reverse
FWD Frame
reverse brake
T=5.0−21.0msec
Center 13.0msec

(＊ 1) Selects the REF PILOT Frequency by SEL1 (IC003-64) and SEL2 (IC003-②).

FREQUENCY	SEL1	SEL2
1	H	H
2	L	L
3	H	L
4	L	L

12. RVS SLOW or RVS FRAME

SIGNAL	L	H	MEASURING POINT SE-10P BOARD (PIN NO)
RF SW PULSE	——		IC003-48, 49
REF PILOT	※1		——
TSA	SAMPL-ING	HOLD	IC003-4
TSB	SAMPL-ING	HOLD	IC003-5
SEL16	16kHz	47kHz	IC003-2
H CHG	H;SP HEAD L;LP HEAD		IC003-3
SERVO DATA	——		IC003-60
CAPSTAN ON	ON	OFF	IC002-4
CAP FWD/RVS	FWD	RVS	IC002-5
REEL FWD/RVS	FWD	RVS	IC002-60
REEL BRAKE	BRAKE	OFF	IC002-62
PB PAUSE	PB PAUSE	NOT PB PAUSE	IC002-23
CAPSTAN OPERATION			


FWD OPERATION
S T I L L
FWD OPERATION
S T I L L
1
1
1
4
1
4
3
4
3
3
3
2
3
2
1
2
1
1
LP:2.0
SP:3.5
msec
LP:2.0msec
SP:3.5msec
STILL
HiZ
12msec
12msec
3msec
3msec
STOP
T
3msec
STOP
T

reverse FWD Frame

reverse brake

Reel control becomes dotted line when STILL/PB PAUSE → RVS SLOW/FRAME.

T=8.5−24.5msec
Center 16.5msec

(✱ 1) Selects the REF PILOT Frequency by SEL1 (IC003-64) and SEL2 (IC003-②).

FREQUENCY	SEL1	SEL2
1	H	H
2	L	L
3	H	L
4	L	L

SECTION 3
PERIODIC CHECK AND MAINTENANCE

It is recommended that the following periodic check and maintenance schedule are employed in order to obtain maximum performance of the unit and longer tape life.

3-1. MAINTENANCE AFTER REPAIRS

Perform the following maintenance after repair regardless the operating hours of the unit.

(1) Cleaning of the Rotary Upper Drum

. Press the cleaning piece moistend with cleaning fluid lightly against the Rotary Upper Drum and turn slowly the Upper Drum counterclockwise with a hand.

Note: Never turn the Upper Drum by the electric power and never turn the Upper Drum clockwise with a hand. Never move the cleaning piece in the veritical direction of head tips in the cleaning.
It tends to damage the video head tips. Please follow the instruction above for cleaning.

2) Cleaning of Tape Running System (fig.1)

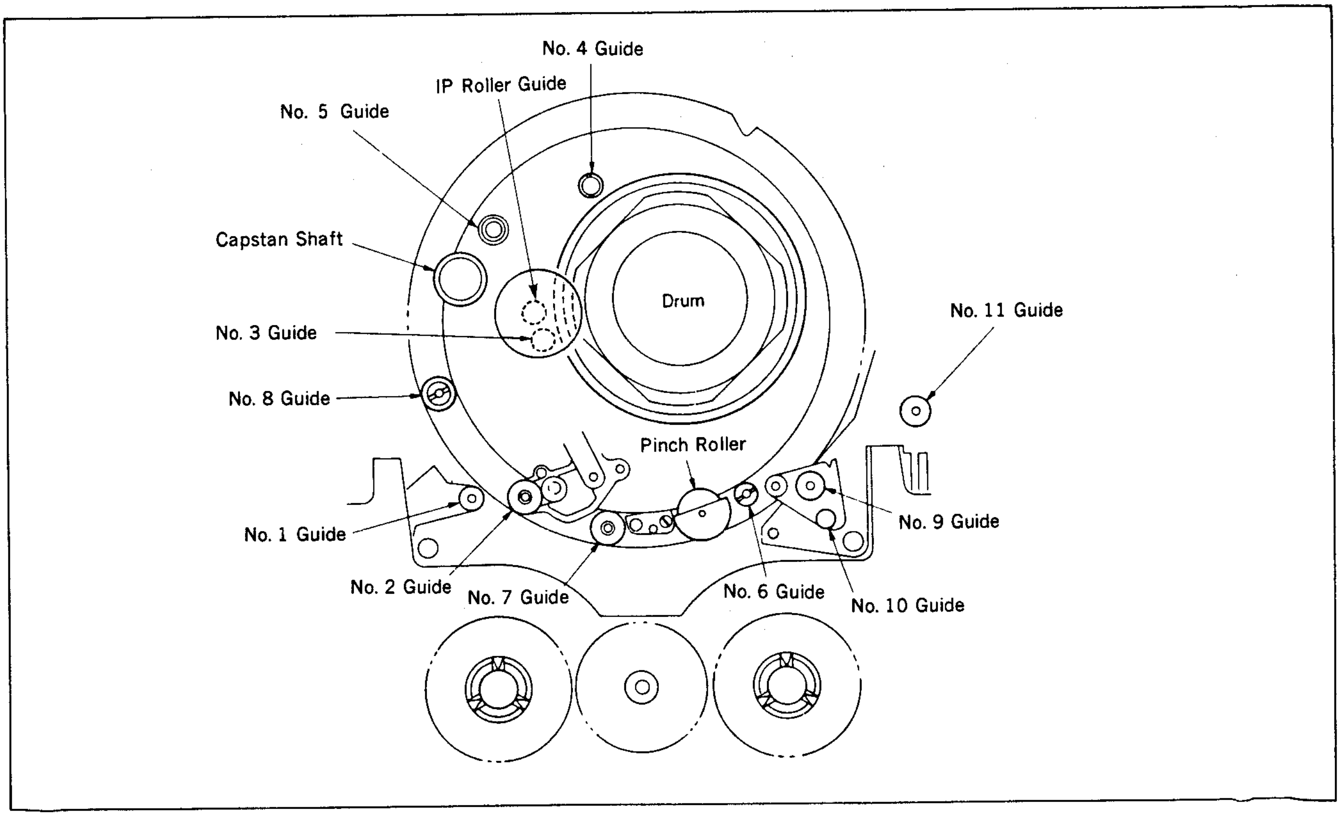
. Put the cassette compartment into the EJECT completion mode and clean the tape running system (No.1 thru No.11 Guides, Capstan Shaft, Pinch Rolloer and IP Roller Guide) with cleaning piece moistend with the clearning the fluid.

(3) Cleaning of Drive System

. Clean the Drive system (reel table surface, belt and timing belt) with cleaning piece moistend with the cleaning fluid.

3-2. PERIODIC CHECK

Perform the maintenance checks deacribed separately in accordance with the operational hour of the unit.


No. 4 Guide
IP Roller Guide
No. 5 Guide
Capstan Shaft
Drum
No. 11 Guide
No. 3 Guide
No. 8 Guide
Pinch Roller
No. 9 Guide
No. 1 Guide
No. 2 Guide
No. 7 Guide
No. 6 Guide
No. 10 Guide

3-3. HOURS METER

The Time Counter of the Front Panel can display the accumulated rotation time of the Upper Drum and the accumulated power-on time.

How to put the Time Counter Display into the Hours Metermode, please refer to Section 2-16.

The Hours Meter has two display modes as follows:

MENU No.205: HOURS METER (DRUM)
Rotation time of the Upper Drum
MENU NO.206: HOURS METER
Power-on time

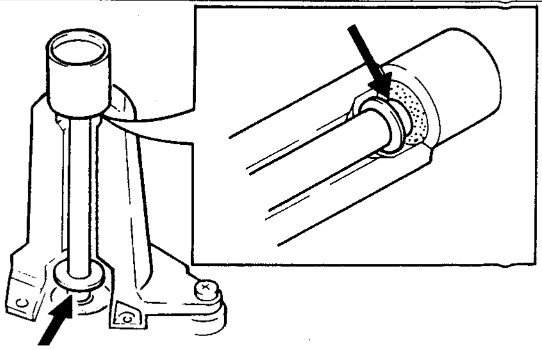
The periodic check and maintenance use MENU No.205.

Refer to the next page for the periodic check list.

○ : Cleaning ◆ : Replacement ◇ : Checking ■ : Oiling

Location			Hours of Use (H) : MENU No.205 (Drum rotation)										Reference Section
	Parts Name	Parts No.	500	1,000	1,500	2,000	2,500	3,000	3,500	4,000	4,500	5,000	
Tape Path	Tape Path surface	—	○	○	○	○	○	○	○	○	○	○	3-1
	Upper Drum Ass'y (DGR-68-R)	A-7049-328-A	○	◆	○	◆	○	—	○	◆	○	◆	4-2
	Drum Ass'y (DGH-68A-R)	A-7048-389-A	○	○	○	○	○	◆	○	○	○	○	4-3
	Pinch Roller Arm Ass'y	X-3686-648-1	○	◆	○	◆	○	◆	○	◆	○	◆	4-5
	(Note 4 :) Capstan motor	8-835-364-01	—	■	—	■	—	◆	—	■	—	■	—
Drive System	Threading motor belt	3-686-546-01	◇	◇	◇	◆	◇	◇	◇	◆	◇	◇	4-7
	Blake plunger	1-454-377-31	—	—	—	○	—	—	—	○	—	—	4-20
	Threading motor	A-7040-065-A	—	—	—	—	—	◆	—	—	—	—	4-7
	M-switch Assy	A-7040-159-A	—	—	—	—	—	◆	—	—	—	—	4-21
	Reel motor	8-835-304-11	—	—	—	—	—	◆	—	—	—	—	4-8
	T Reel Table Ass'y	X-3711-998-1	—	—	—	—	—	◆	—	—	—	—	4-14
	S Reel Table Ass'y	X-3713-427-1	—	—	—	—	—	◆	—	—	—	—	4-13
	T•Main Brake Ass'y	X-3686-574-1	—	—	—	◆	—	—	—	◆	—	—	—
	S•Main Brake Ass'y	X-3711-991-1	—	—	—	◆	—	—	—	◆	—	—	—
	T•Soft Brake Ass'y	X-3711-987-2	—	—	—	◆	—	—	—	◆	—	—	—
	REW Brake Ass'y	X-3711-993-1	—	—	—	◆	—	—	—	◆	—	—	—
	Tension Regulator Band Ass'y	X-3686-531-1	—	—	—	◆	—	—	—	◆	—	—	4-17
	Roller (Cassette-up Compartment)	3-713-466-01	○	○	○	○	○	○	○	○	○	○	—
Performance Check	Abnormal-noise	—	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	—
	FWD Back tension measurement	—	—	◇	—	◇	—	◇	—	◇	—	◇	5-5
	Brake torque measurement	—	—	◇	—	◇	—	◇	—	◇	—	◇	5-1, 5-2, 5-3
	FWD, RVS torque measurement	—	—	◇	—	◇	—	◇	—	◇	—	◇	5-4

Note 1 : When overhauling the unit, refer to the items above for replacement of parts.
Note 2 : The time of parts replacement will differ with operating environment
Note 3 : Be sure to clean the tape path surface in repairing.
Note 4 : Oiling to the Capstan Shaft Bearing.
Apply one-half drop of oil to the Capstan Shaft Bearing after removing the Chapstan Motor.
(Never apply oil to the tape path surface.)



3-4. HOW TO USE THE CLEANING TAPE

Cleaning Tape: V8-6CLHSP (supplied accessory)
V8-25CLH (option)

. Never use the cleaning tape, V8-25CLN.

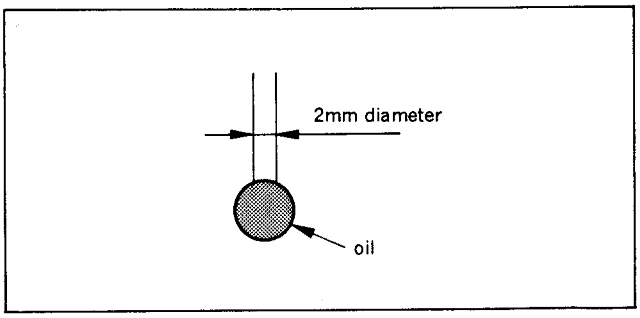
(1) When the rotary heads clog and head cleaning descrived Section 3-1 can not clean the heads, use the cleaning tape.
If use the cleaning tape except for the above, it will shorten the life of the heads.

(2) The one time cleaning is within fifteen seconds and use the cleaning tape only one time after rewinding.

3-5. OTHERS

(1) Sony oil

- Be sure to use the Sony oil as the lubrication oil. (If other oil is useed, various troubles due to different viscosity tends to be caused.)
  Sony oil: Part No. 7-661-018-18
- Use the Sony oil in which dust or other foreign material have not mixed for lubricating the bearing. (If foreign material is in the oil, wear or burning of the bearing tends to be caused.)
- One drop of oil means the amount which sticks to a 2 mm diameter rod, as shown in the figure.



(2) Sony grease

- Be sure to use the Sony grease as the lubrication grease.
  Sony grease: Part No. 7-662-001-62
  (SGL-501)

(3) MOLYTONE GREASE

- Be sure to use the MOLYTONE GREASE as the lubrication grease.
  MOLYTONE GREASE: Part No. 7-662-001-41
  (No. 320)

SECTION 4
REPLACEMENT OF MAJOR PARTS

PREPARATION FOR REPLACEMENT OF PARTS

Replacement of some parts use the *Mode Selector. The mode (☐ marked mode) in the replacement procudure is set by pressing the button on the Mode Selector.

*It is a kind of tool.
Part No. : J-6080-825-A

. Operation of Mode selector

1. Location of parts and controls (fig. 1)
2. Connection (fig. 2)
   (1) Remove the Front Panel, Bottom Plate and Top Panel referring to Section 2-1.
   (2) Remove the Mecha Deck Block from the unit referring to Section 2-2.
   (3) Remove the MB-19, MD-23(P), HK-5 and SE-10(P) Boards from the unit referring to Sections 2-5-5, 2-5-6 and 2-5-7.
   (4) Disconnect the connectors (6P) on the MS-4 and LS-9 Boards.
   (5) Connect the 6P connector (six harness, white) for the M-switch of the Mode Selector to the MS-4 Board.
   (6) Connect the 6P connector (four harness, black) for the L-switch of the Mode Selector to the LS-9 Board.
   (7) Remove the cover of the Threading Motor.
   (8) Connect the red clip of the Threading Motor driver lead to the red terminal of the Threading Motor and the black clip to the brown terminal.

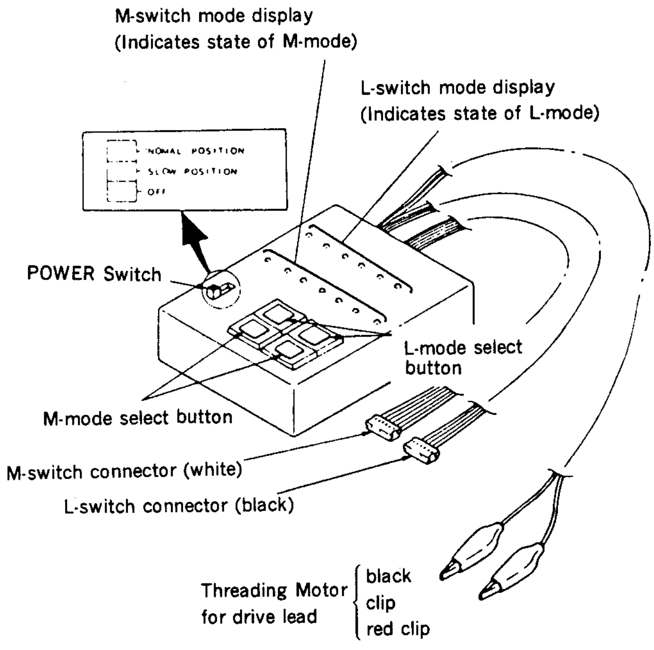

M-switch mode display
(Indicates state of M-mode)
L-switch mode display
(Indicates state of L-mode)
NOMAL POSITION
SLOW POSITION
OFF
POWER Switch
L-mode select button
M-mode select button
M-switch connector (white)
L-switch connector (black)
Threading Motor for drive lead
black clip
red clip

Fig. 1

3. Note

(1) When operating L-switch, be sure to set the mode of M-switch to LOADING/ UNLOADING mode.

(2) When operating M-switch, be sure to set the mode of L-switch to LOADING TOP or LOADING END mode.

4. Operation

When L-mode or M-mode does not set in each mode during mode selection, the BLANK position lights up.

(1) L-mode

- When the right side L-mode select button is pressed continuously, the mode changes from LOADING TOP to LOADING END in order from left.
- When the mode changes from LOADING END to LOADING TOP in order, press the left side L-mode select button cotinuously.
- When the power switch is set to the SLOW position, the L-mode operates more slowly than the NORMAL position.

(2) M-mode

- When performing EJECT, set the mode of L-switch to LOADING TOP.
- When performing from FF/REW to RVS or from RVS to FF/REW, set the mode of L-switch to LOADING END.
- When the right side M-mode select button is pressed continuously, the mode changes from EJECT to RVS in order from left.
- When the mode changes from RVS to EJECT, press the left side M-mode select button continuously.

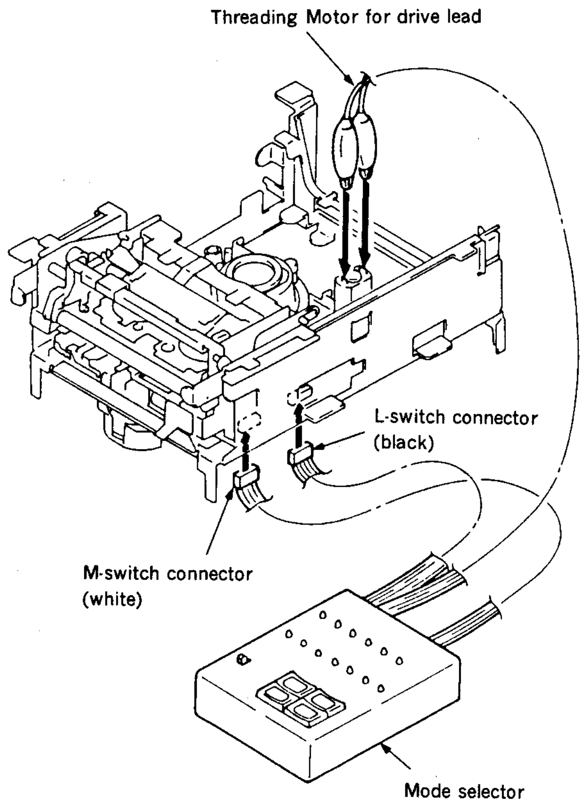


Fig. 2

4-1. REPLACEMENT OF THE FLY WHEEL

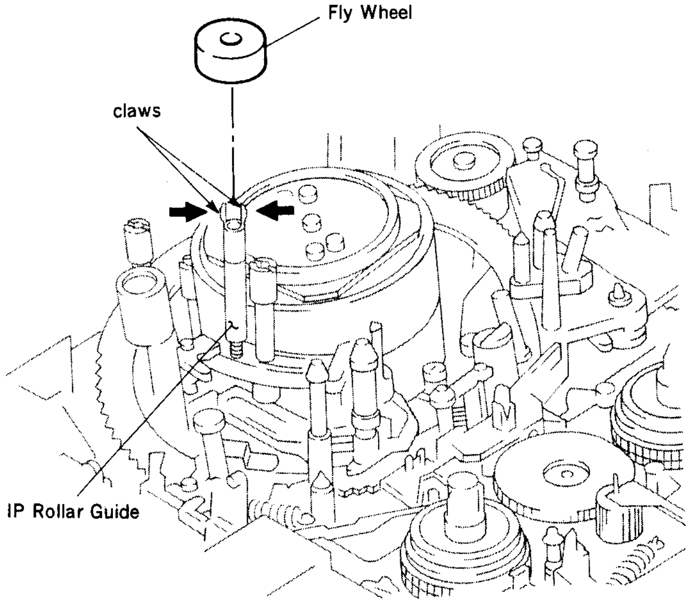
Removal:

(1) Open the MB-19 Board referring to Section 2-5-5.

(2) Remove the Fly Wheel while picking the claws.

Installation:

(1) Replace the Fly Wheel with a new one. Insert the Fly Wheel in the IP Rollar Guide from the big hole side until click sound can be heard.


Fly Wheel
claws
IP Rollar Guide

4-2. REPLACEMENT OF THE ROTARY UPPER DRUM

- The video heads can not be replaced as a single part. Replace the whole Rotary Upper Drum Assembly.
- There is a relay PC Board (DH-13 Board) for the video and audio signals in the Rotary Upper Drum. It is not necessary to replace the DH-13 Board, if it is broken, replace the whole the Rotary Upper Drum Assembly.

Tools: Rotary Drum Tool (Ref No. J-11)
(It is packed together with the Repair Rotary Upper Drum.)
L-shaped wrench
(across flat has 1.5 mm)

Removal:

(1) Open the MB-19 Board referring to Section 2-5-5.

(2) Remove the Fly Wheel reffering to Section 4-1.

(3) Remove the two screws (M2 X 2.7) and remove the Dynamic Damper.

(4) Unsolder the ten terminals at A positions. Check that the terminals which are projected out from the PC Board move freely with a pair of tweezers, etc. (fig. 1)

(5) Remove the two screws (M2 X 5).

(6) Install the tool A to the two screw holes of installing the Dynamic Damper with the two accessory supplied screws. Thread the accessory supplied hexagon screw into the center hole of the tool A, and remove the Rotary Upper Drum. (fig. 2)

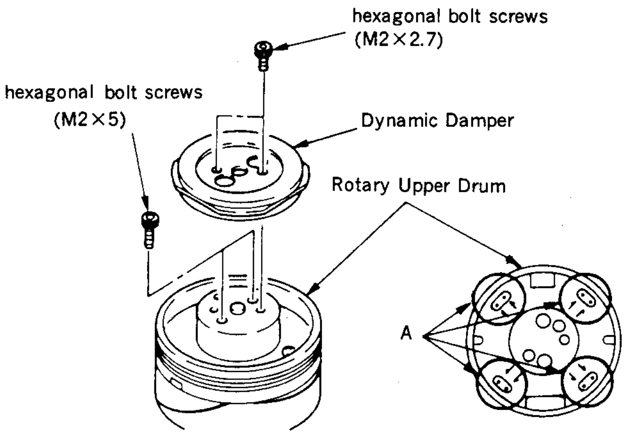

hexagonal bolt screws
(M2×2.7)
hexagonal bolt screws
(M2×5)
Dynamic Damper
Rotary Upper Drum
A

Fig. 1

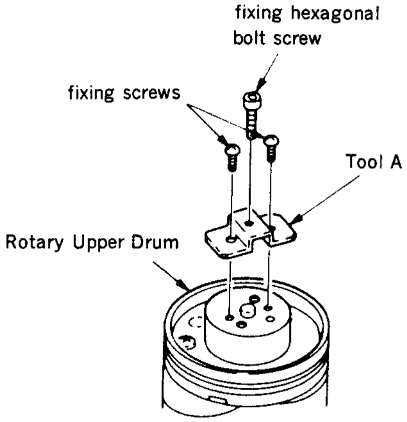

fixing hexagonal
bolt screw
fixing screws
Tool A
Rotary Upper Drum

Fig. 2

Installation:

(1) Clean the flange surface of the Lower Drum and the contact point of the new Rotary Upper Drum with a cleaning piece. Check that no dust or flaw are left.

(2) While adjusting the positional relationship of the Rotary Upper Drum and positioning hole with the tool B, insert the Rotary Upper Drum lightly. At this time, Check that the terminals project out from the PC Board of the Rotary Upper Drum. When the terminals are caught, correct them with a pair of tweezers, etc.. Remove the tool B and lightly push the Rotary Upper Drum by hand. If the Rotary Upper Drum does not down to the botom, thread the two fixing screws to the Rotary Upper Drum alternately, but do not tighten them. Insert the tool B in the positioning hole and check that the tool B can be inserted smoothly again. If the tool B can not be inserted, loosen the two screws (M 2 x 5) and adjust the position of the Rotary Upper Drum by precision screwdriver. (fig. 3 and 4)

(3) Tighten the two hexagon screws (M2 X 5).

(4) Assemble the parts with Removal Steps (1) to (4) in reverse order.

Note: . Do not tighten all the screws too strongly.

. Be carefull not to flow solder below the PC Board.

Note: After replacement, perform the Tape Path Adjustment referring to Section 6.

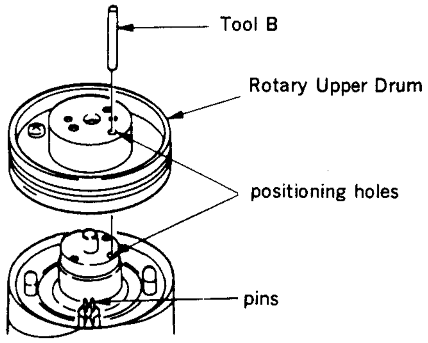


Fig. 3

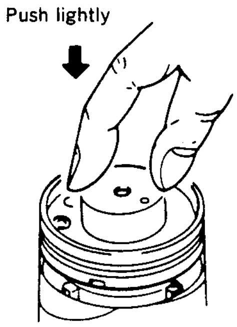


Fig. 4

4-3. REPLACEMENT OF THE DRUM ASSEMBLY

Removal:

(1) Open the MB-19 Board referring to Section 2-5-5.

(2) Remove the Cassette-up Compartment Assembly referring to Section 2-3.

(3) Remove the Fly Wheel referring to Section 4-1.

(4) Open the HK-5 and SE-10(P) Boards referring to Section 2-5-6 and 2-5-7.

(5) Remove the two fixing screws and remove the Flexible Cover. (fig. 1)

(6) Disconnect the connectors (CN805, 806) on the MD-23(P) Board and disconnect the connector (CN001) on the FR-43 Board.

(7) Remove the fixing screw and remove the Shaft Ground Terminal.

(8) Remove the two fixing screws and remove the Drum Assembly. (fig. 2)

Note: At this time, be careful that the Drum Assembly does not touch the No. 3 Guide and the IP Roller Guide, etc..

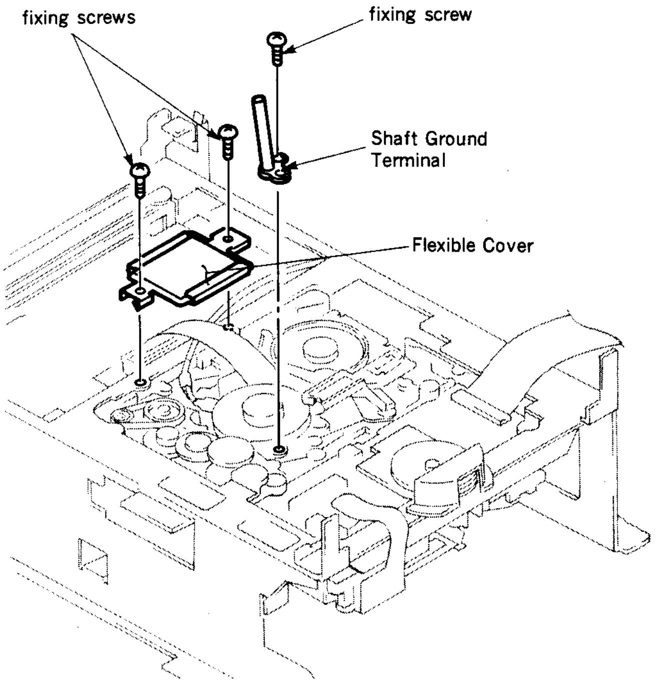

fixing screws
fixing screw
Shaft Ground Terminal
Flexible Cover

Fig. 1

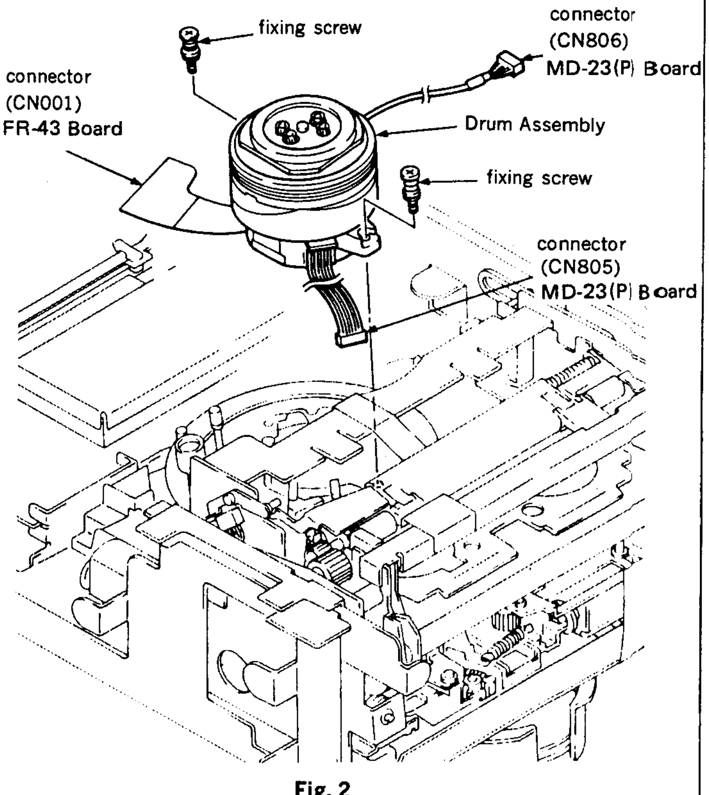

fixing screw
connector (CN806) MD-23(P) Board
connector (CN001) FR-43 Board
Drum Assembly
fixing screw
connector (CN805) MD-23(P) Board

Fig. 2

Installation:

(1) Clean the flange surface of the new Drum Assembly and the contact point of the mechanical chassis with a cleaning piece.

(2) Set the Drum Assembly to the two projections of the Mecha chassis and tighten the two fixing screws.

Note: At this time, be careful that the screwdriver does not touch the head chips. (fig. 3)

(3) Peel off the tape from the Rotor and FG Stator of the Drum Assembly.

(4) Clean the shaft of the Drum Assembly with a cleaning piece.

(5) Clean the Shaft Ground Terminal which contact to the Drum Shaft with a cleaning piece and set the Shaft Ground Terminal to the projection of mechanical chassis and tighten the fixing screw.

(6) Assemble the parts with Removal Steps (1) to (6) in reverse order.

Note: After replacement, perform the Tape Path Adjustment referring to Section 6.

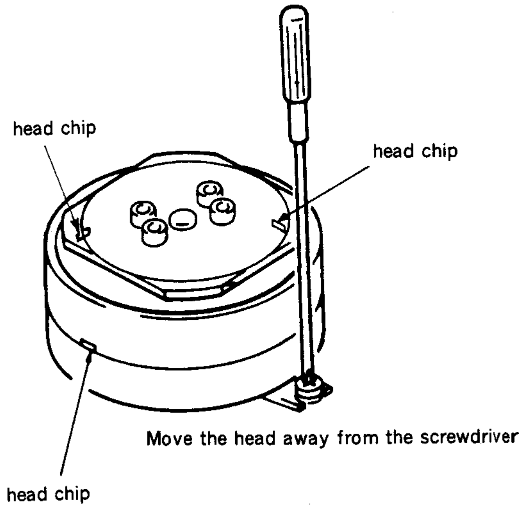


Fig. 3

4-4. REPLACEMENT OF THE THREADING RING ASSEMBLY

Tools: Mode Selector (Ref. No. J-13)
No. 10 Gear Phase Tool
(Ref. No. J-9)
Sony Oil

Removal:

(1) Remove the Cassette-up Compartment Assembly referring to Section 2-3.

(2) Press the L-mode select button of the Mode Selector and move the Guide Base Assembly and the No. 2 Guide Assembly until just before it is locked. (Do not move the Threading Ring Assembly.)

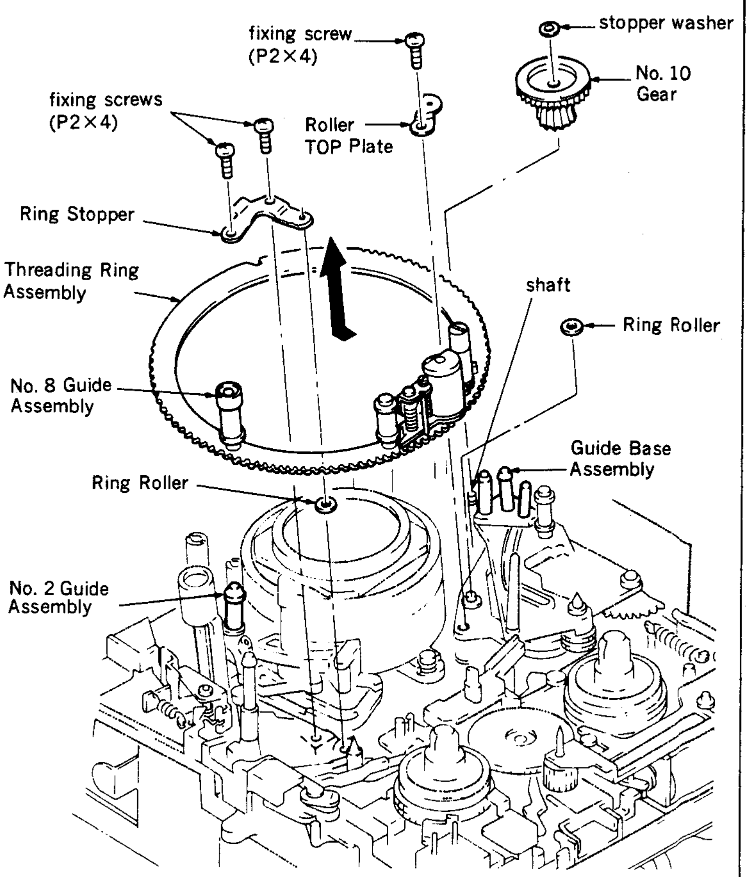
(3) Remove the stopper washer and remove the No. 10 Gear Assembly.

(4) Remove the fixing screw and remove the Roller Top Plate and Ring Roller.

(5) Remove the two fixing screws and remove the Ring Stopper and Ring Roller.

(6) Remove the Threading Ring Assembly in the direction of the arrow.

Note: When removing the Threading Ring Assembly, be careful that the Threading Ring Assembly does not touch the Drum and Capstan Shaft.


fixing screw
(P2×4)
stopper washer
No. 10
Gear
fixing screws
(P2×4)
Roller
TOP Plate
Ring Stopper
Threading Ring
Assembly
shaft
Ring Roller
No. 8 Guide
Assembly
Guide Base
Assembly
Ring Roller
No. 2 Guide
Assembly

Installation:

(1) Replace the Threading Ring Assembly with a new one.

(2) Install the Threading Ring Assembly so that it puts into the unthreading mode. The Pinch Roller Arm Assembly is the Reel Table side. (Check that each assembly is put into the Step (2) at removal procedure.)

(3) Install the Ring Roller and Ring Stopper and tighten them with two fixing screws. (Check that the No. 8 Guide Assembly is in front of Ring Stopper.)

(4) Install the Ring Roller and Roller Top Plate and tighten them with the screw. (Check that the Threading Ring Assembly matches the three Ring Rollers.)

(5) Apply a half drop of oil on the shaft.

(6) Check that the pin of the Drive Changer Assembly is into the notch of the L-switch Assembly. Insert the No. 10 Gear Phase Tool (Ref. No. J-9) into the notch of the L-SW Assembly.

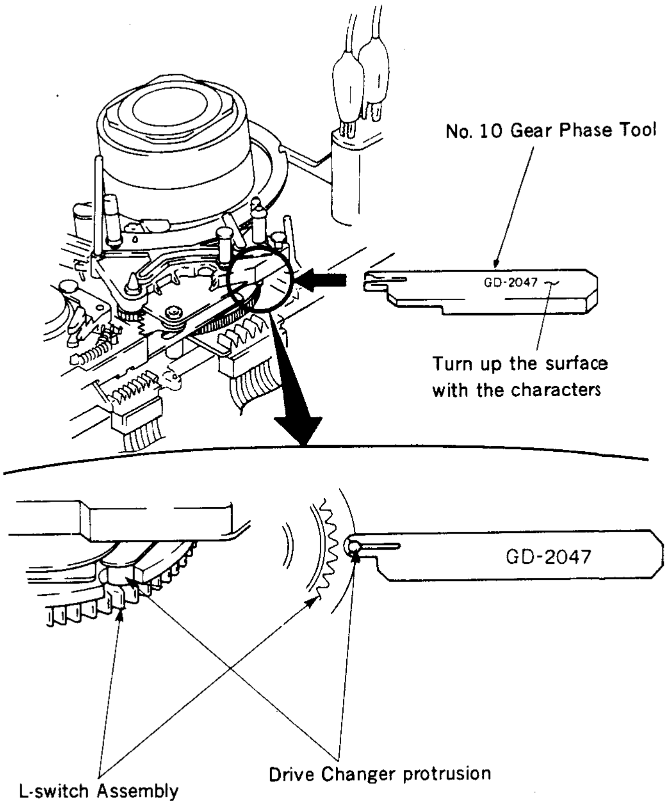
(7) While pushing the No. 8 Guide Assembly against the Ring Stopper, install the No.10 Gear Assembly with a stopper washer.

(8) Pull out the No. 10 Gear Phase Tool.

(9) Press the L-mode select button of the Mode Selector and set to the LOADING TOP mode.

(10) Install the Cassette-up Compartment Assembly referring to Section 2-3.

Note: After replacement, perform the Tape Path Adjustment referring to Section 6.



4-5. REPLACEMENT OF THE PINCH ROLLER ARM ASSEMBLY

Removal:

(1) Open the MB-19 Board referring to Section 2-5-5.

(2) Remove the Cassette-up Compartment Assembly referring to Section 2-3.

(3) Remove the stopper washer. (fig. 1)

(4) Hook the spring which is hooked to the No. 7 Guide Assembly to the groove of the Pinch Roller Arm (fig. 2)

(5) Turn the Pinch Roller Arm Assembly in the direction of the arrow. (fig. 3)

(6) Remove the Pinch Roller Arm Assembly in the direction of the arrow. (fig. 4)

(7) Remove the spring. (fig. 5)

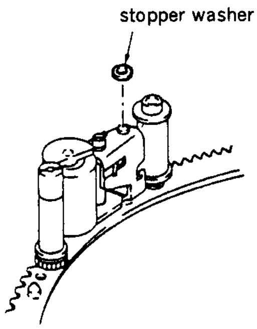

stopper washer

Fig. 1

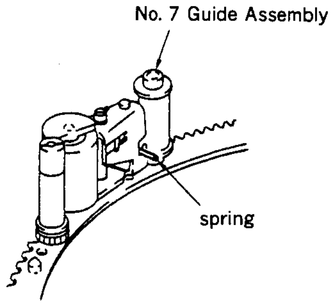

No. 7 Guide Assembly
spring

Fig. 2

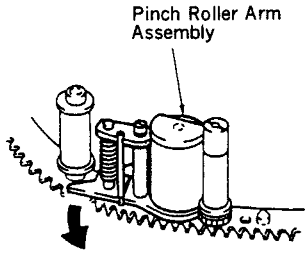

Pinch Roller Arm Assembly

Fig. 3

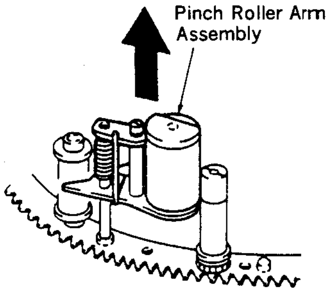

Pinch Roller Arm Assembly

Fig. 4

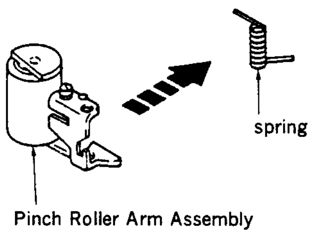

spring
Pinch Roller Arm Assembly

Fig. 5

Installation:

(1) Replace the Pinch Roller Arm Assembly with a new one.

(2) Install the spring and hook the ends of the spring to the Pinch Roller Arm Assembly. (fig. 1)

(3) Insert the end of the clip or another thin rod into the hole of the Pinch Roller Arm Assembly. (fig. 2 and 3)

(4) Put the end of the clip to the shaft of the Threading Ring Assembly and install the Pinch Roller Assembly. (fig. 4 and 5)

(5) Hook the end of the spring to the No. 7 Guide Assembly.
At this time, check that the another end of the spring is hooked to "A". (fig. 6)

(6) Assemble the parts with Removal Steps (1) to (3) in reverse order.

Note: After replacement, perform the Tape Path Check referring to Section 6-6.

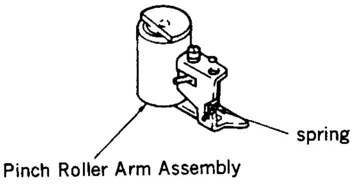

spring
Pinch Roller Arm Assembly

Fig. 1

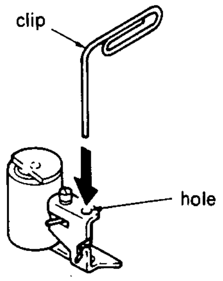


Fig. 2

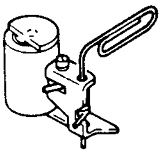


Fig. 3

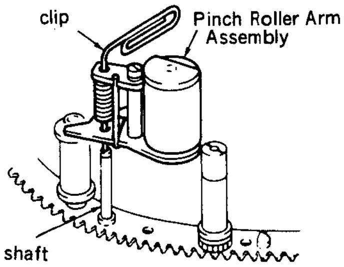

clip
Pinch Roller Arm Assembly
shaft

Fig. 4

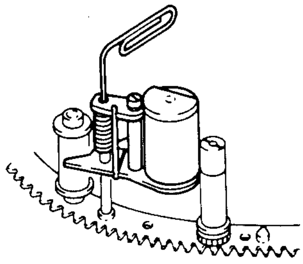


Fig. 5

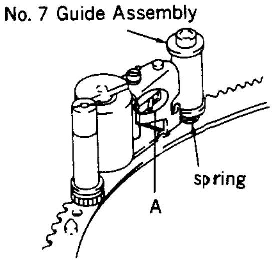

No. 7 Guide Assembly
spring
A

Fig. 6

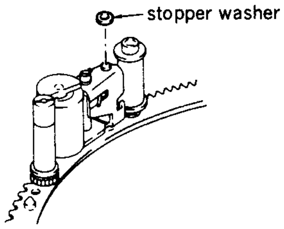

stopper washer

Fig. 7

4-6. REPLACEMENT OF THE CAPSTAN MOTOR

Removal:

(1) Open the MB-19 Board referring to Section 2-5-5.

(2) Remove the Cassette-up Compartment Assembly referring to Section 2-3.

(3) Remove the Threading Ring Assembly referring to Section 4-4.

(4) Open the HK-5 and SE-10(P) Boards referring to Sections 2-5-6 and 2-5-7.

(5) Remove the two fixing screws and remove the Flexible Cover.

(6) Remove the harness of the Capstan Motor from the Wire Holder.

(7) Remove the fixing screw and remove the Wire Holder.

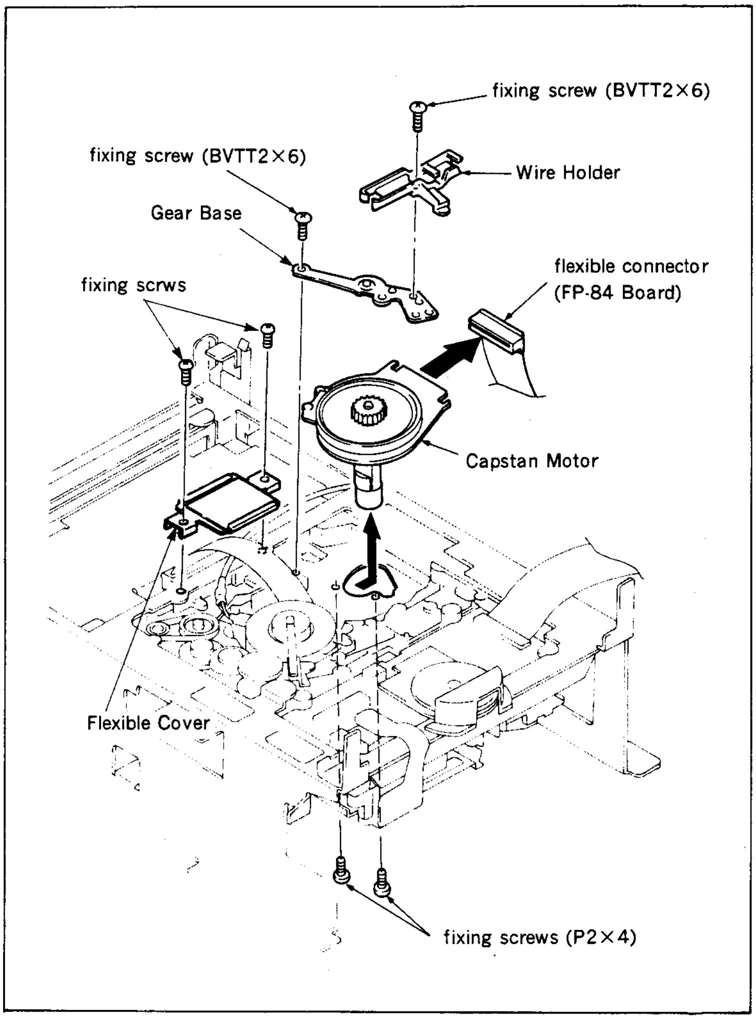
(8) Remove the fixing screw and remove the Gear Base.

(9) Disconnect the flexible connector of the Capstan Motor.

(10) Remove the two fixing screws and remove the Capstan Motor in the direction of the arrow.

Installation:

(1) Replace the Capstan Motor with a new one and assemble the parts with Removal Steps (1) to (10) in reverse order.


fixing screw (BVTT2×6)
fixing screw (BVTT2×6)
Wire Holder
Gear Base
flexible connector (FP-84 Board)
fixing scrws
Capstan Motor
Flexible Cover
fixing screws (P2×4)

4-7. REPLACEMENT OF THE THREADING MOTOR ASSEMBLY

Removal:

(1) Open the MB-19 Board referring to Section 2-5-5.

(2) Open the HK-5 and SE-10(P) Boards referring to Section 2-5-6 and 2-5-7.

(3) Remove the L Motor Belt.

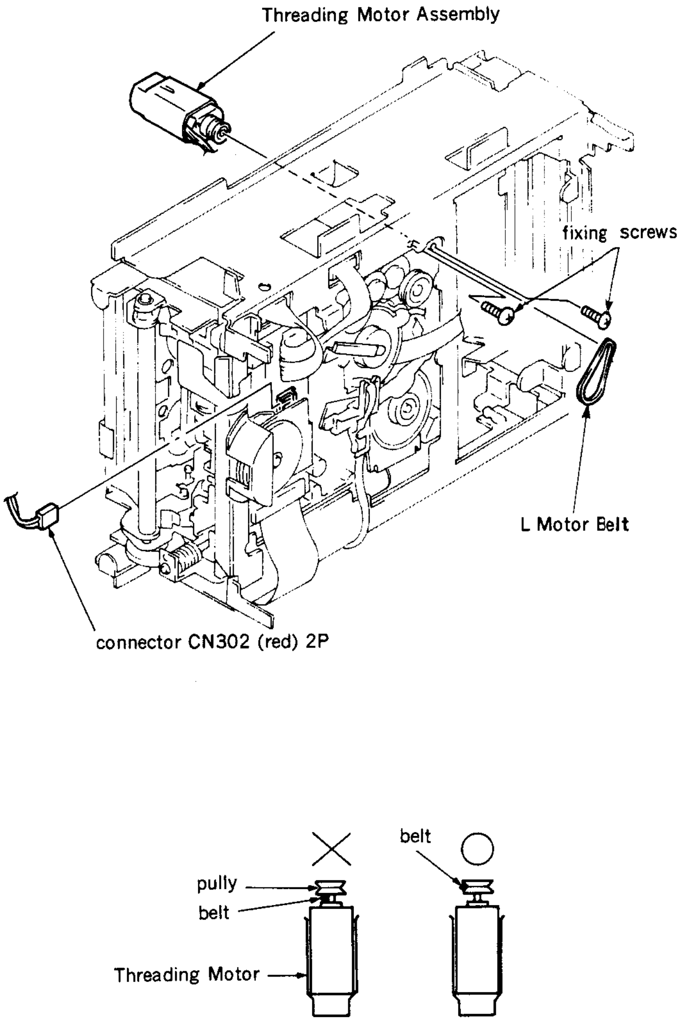
(4) Disconnect the connector (CN302) on the RS-31 Board.

(5) Remove the two fixing screws and remove the Threading Motor Assembly.

Installation:

(1) Replace the Threading Motor Assembly with a new one and assemble the parts with Removal Steps (1) to (5) in reverse order.

Note: Before installing the L Motor Belt, clean it with a cleaning piece and be sure to install the belt in the groove of pulley.


Threading Motor Assembly
fixing screws
L Motor Belt
connector CN302 (red) 2P
×
belt
○
pully
belt
Threading Motor

4-8. REPLACEMENT OF THE REEL MOTOR

Removal:

(1) Open the HK-5 and SE-10(P) Boards referring to Section 2-5-6 and 2-5-7.

(2) Remove the FP-122 Flexible Board from the PC Board of the Reel Motor.

(3) Remove the FP-206 Flexible Board from the RS-31 Board.

(4) Remove the two fixing screws of the Motor Bracket.

(5) Insert a flatblade screwdriver into A, release the projection B and remove the Motor Bracket.

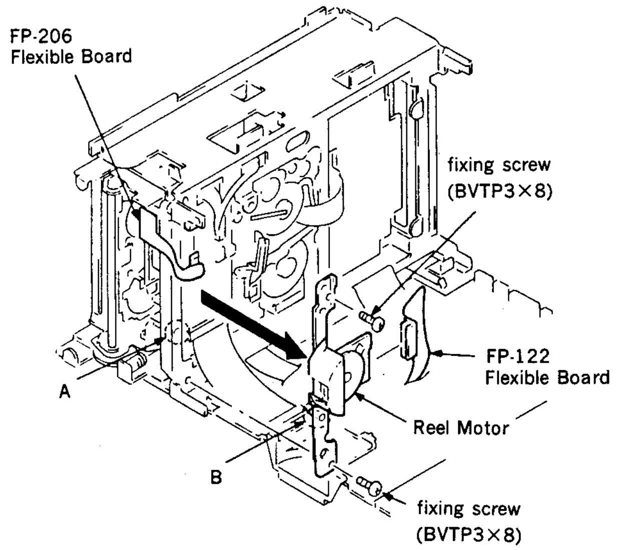
Note: If the Motor Bracket is removed by hand directly, it tends to damage the Motor Bracket.

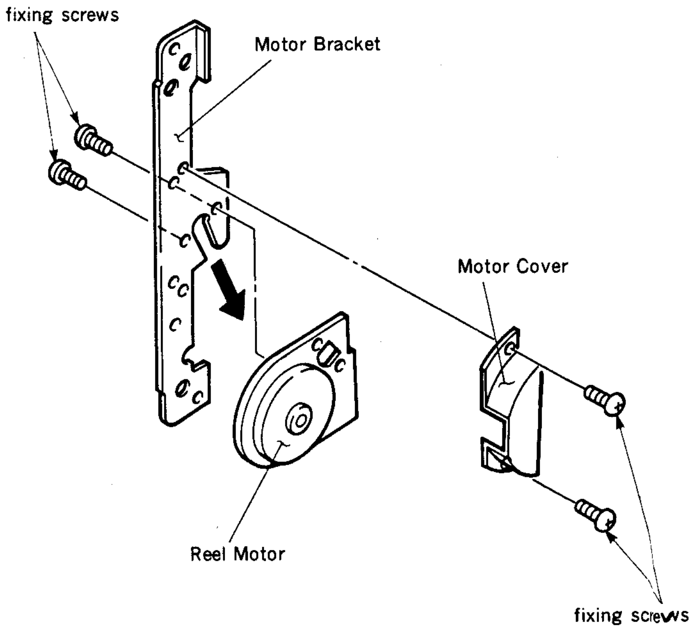
(6) Remove the two fixing screws and remove the Motor Cover from the Motor Bracket.

(7) Remove the two fixing screws and remove the Reel Motor in the direction of the arrow.

Installation:

(1) Replace the Reel Motor with a new one. Assemble the parts with Removal Steps (1) to (7) in reverse order.


FP-206
Flexible Board
fixing screw
(BVTP3×8)
FP-122
Flexible Board
A
Reel Motor
B
fixing screw
(BVTP3×8)


fixing screws
Motor Bracket
Motor Cover
Reel Motor
fixing screws

4-9. REPLACEMENT OF THE No. 3 AND No. 4 GUIDES

Removal:

(1) Open the MB-19 Board referring to Section 2-5-5.

(2) When replacing the No. 3 Guide, remove the Fly Wheel referring to Section 4-1.

(3) Turn the Rotary Upper Drum counterclockwise and keep heads away from the No. 3 Guide or No. 4 Guide.

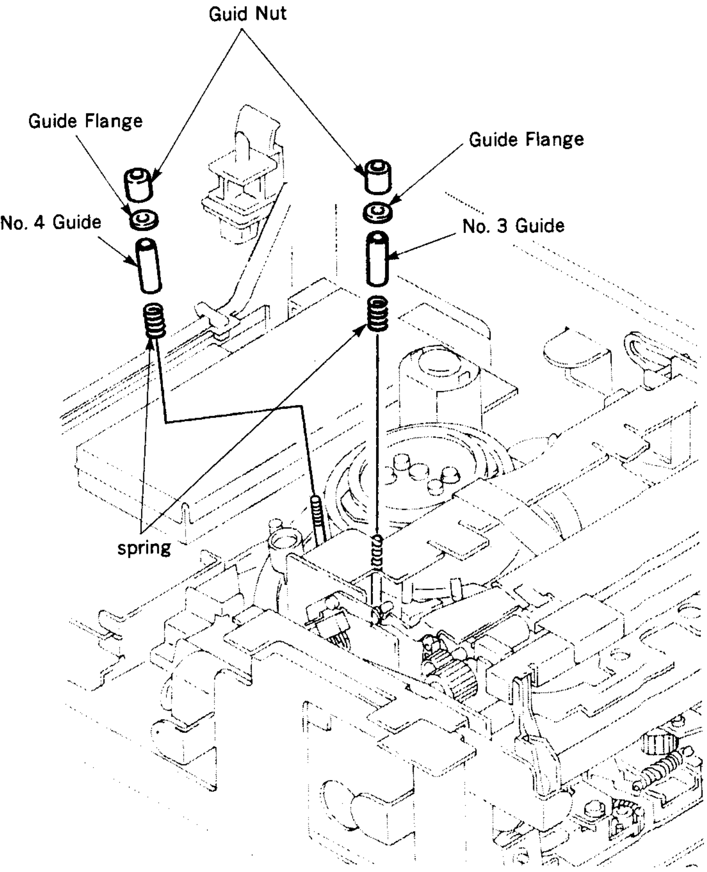
(4) Remove the Guide Nut and remove the Guide Flange, No. 3 Guide (or No. 4 Guide) and spring.

Installation:

(1) Replace the No. 3 Guide (or No. 4 Guide) with a new one.

(2) Assemble the parts with Removal Steps (1) to (4) in reverse order.

Note: After replacement, adjust the height of the No. 3 and No. 4 Guides to meet the tape path condition of Section 6-6-3 by turing the Guide Nut.



4-10. REPLACEMENT OF THE ENTRANCE GUIDE (P) ASSEMBLY (No. 2 GUIDE ASSEMBLY)

Removal:

(1) Open the MB-19 Board referring to Section 2-5-5.

(2) Remove the Cassette-up Compartment Assembly referring to Section 2-3.

(3) Remove the Fly Wheel referring to Section 4-1.

(4) Turn the Rotary Upper Drum counterclockwise and keep heads away from the Entrance Guide (P) Assembly.

(5) Remove the Guide Nut and remove the Guide Flange, No. 3 Guide and spring.

(6) Remove the two fixing screws and remove the Entrance Guide (P) Assembly.

Installation:

(1) Check that the mechanical block is put into the LOADING TOP mode.

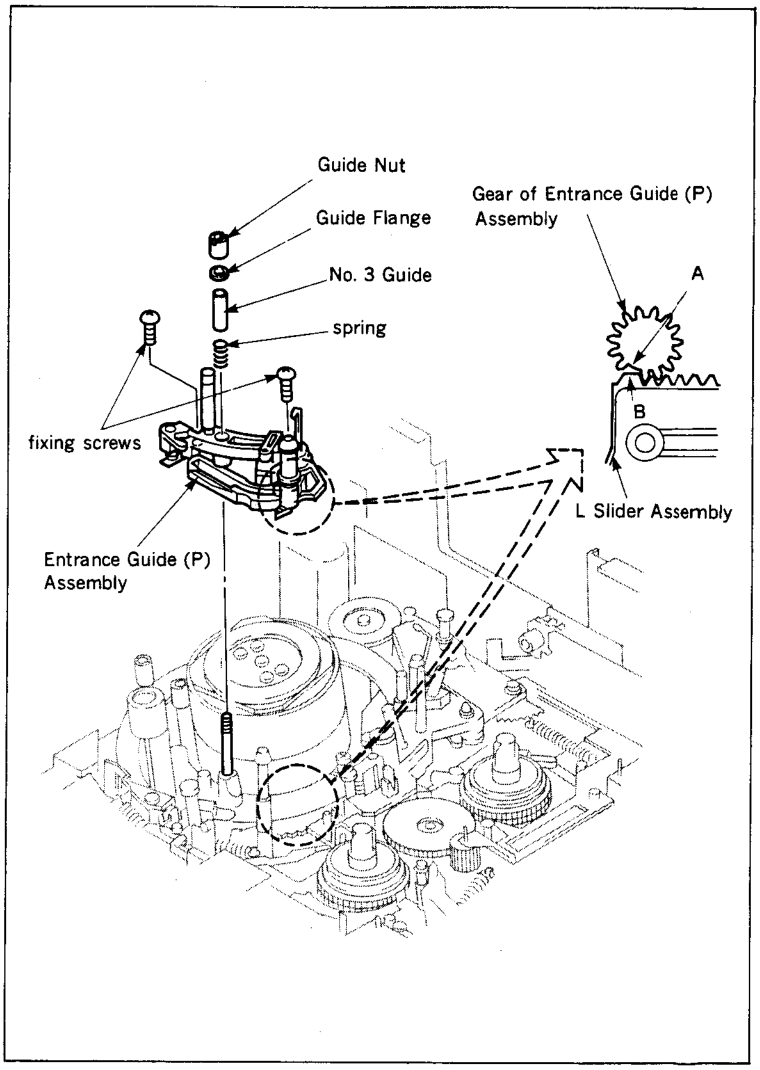
(2) Replace the Entrance Guide (P) Assembly with a new one.

(3) Engage the Entrance Guide (P) Assembly and L Slider Assembly so that their flat portions A and B are matched, and tighten it with two fixing screws.

(4) Assemble the parts with Removal Steps (3) and (5) in reverse order.

(5) Perform the FWD running more than two minutes and then perform the FWD Back Tension Adjustment referring to Section 5-5.

(6) Assemble the parts with Removal Steps (1) and (2) in reverse order.


Guide Nut
Guide Flange
No. 3 Guide
spring
fixing screws
Entrance Guide (P) Assembly
Gear of Entrance Guide (P) Assembly
A
B
L Slider Assembly

Note: After replacement, perform the Tape Path Adjustment referring to Section 6.

4-11. REPLACEMENT OF THE SLANT GUIDE ASSEMBLY

Tool: Mode Selector (Ref. No. J-13)

Removal:

(1) Remove the Cassette-up Compartment Assembly referring to Section 2-3.

(2) Remove the Threading Ring Assembly referring to Section 4-4.

(3) Remove the fixing screw and E ring.

(4) Remove the Slant Guide Block Assembly.

Installation:

(1) Operate the L-mode select button of the Mode Selector and align the right edge of the L Slider Assembly and the right side of the Lock Slider M Assebmly. (fig. 2)

Note: At this time, check that the position of the notch on the Slant Guide Drive Gear is placed as shown in figure 2.

(2) Assemble the Guide Base Assembly of new Slant Guide Block Assembly the position of the *unthreading end.

*The Guide Base Assembly is the Reel Table side.

(3) Assemble the parts with Removal Steps (1) to (3) in reverse order.

Note: After replacement, perform the Tape Path Check referring to Section 6-6.

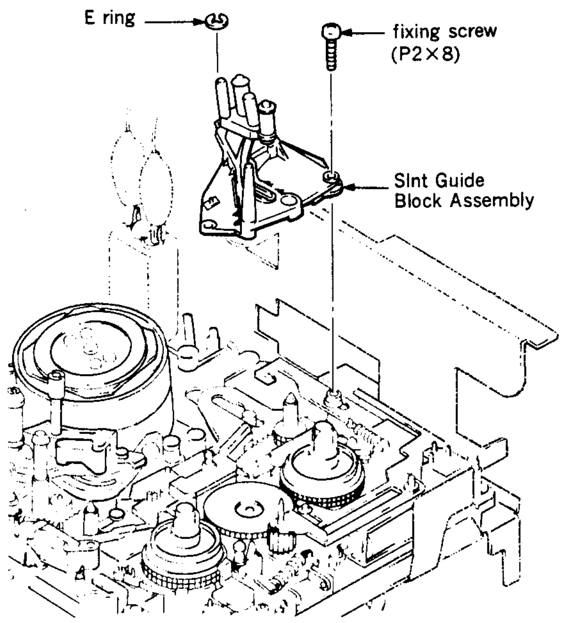

E ring
fixing screw
(P2×8)
Slnt Guide
Block Assembly

Fig. 1

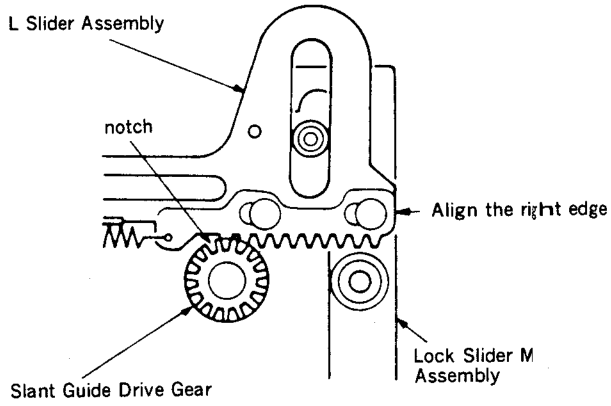

L Slider Assembly
notch
Align the right edge
Lock Slider M
Assembly
Slant Guide Drive Gear

Fig. 2

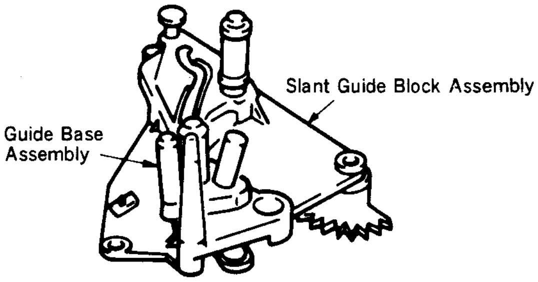

Slant Guide Block Assembly
Guide Base
Assembly

Fig. 3

4-12. REPLACEMENT OF THE No. 5 GUIDE BLOCK COMPLETE ASSEMBLY

Removal:

(1) Open the MB-19 Board referring to Section 2-5-5.

(2) Turn the Rotary Upper Drum counterclockwise and keep heads away from the fixing screw of the Guide Block.

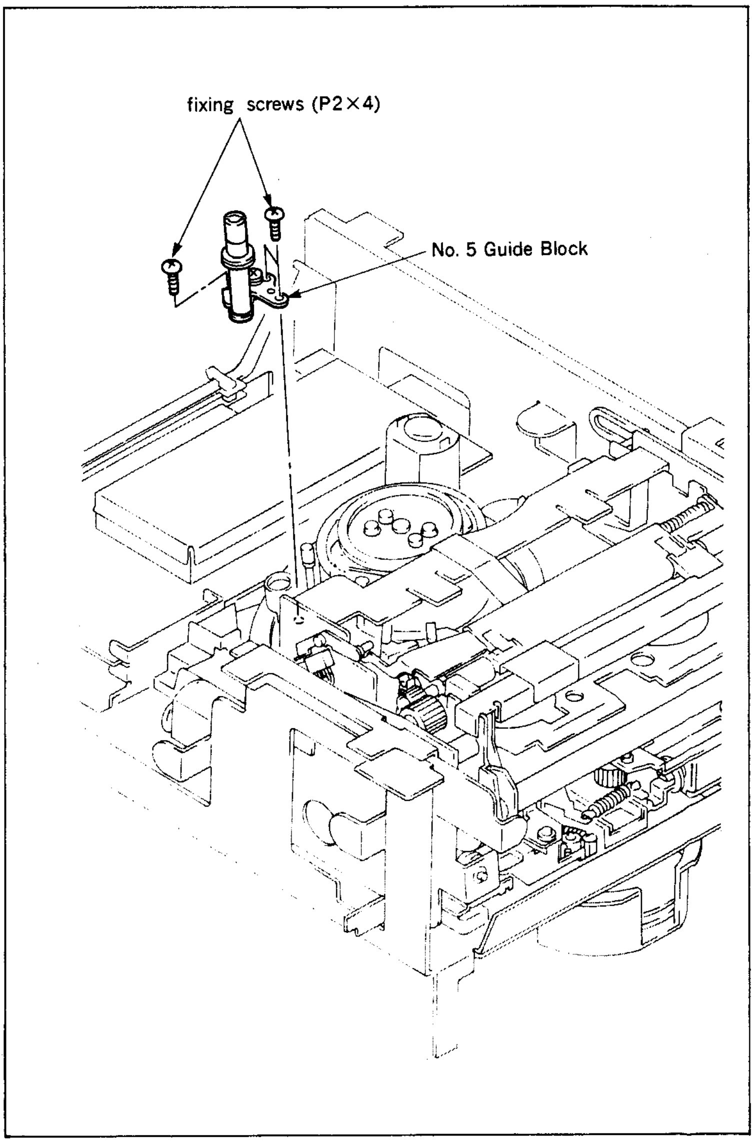
(3) Remove the three fixing screws and remove the No. 5 Guide Block Complete Assembly.

Installation:

(1) Replace the No. 5 Guide Block Complete Assembly with a new one.

(2) Assemble the parts with Removal Steps (1) and (3) in reverse order.

Note: After replacement, perform the Tape Path Adjustment referring to Section 6.



4-13. REPLACEMENT OF THE S REEL TABLE ASSEMBLY

Tools: Mode Selector (Ref. No. J-14)
Cassette Tape
Dial Tension Gauge (Ref. No. J-6)
Tension Measurement Reel (30 mm dia.) (Ref. No. J-7)
Sony Oil

Removal:

(1) Remove the Cassette-up Compartment Assembly referring to Section 2-3.

(2) Press the M-mode select button of the Mode Selector and set to the FF/REW mode.

(3) Remove the fixing screw and remove the Reel Table Stopper.

(4) Remove the S Reel Table Assembly.
Note: Be sure to hold the upper reel claw when removing the S Reel Table. (Note of figure)

Installation:

(1) Apply a half drop of oil on the top point of the Reel Shaft.

(2) Move the S Main Brake Assemvly in the direction of the arrow.

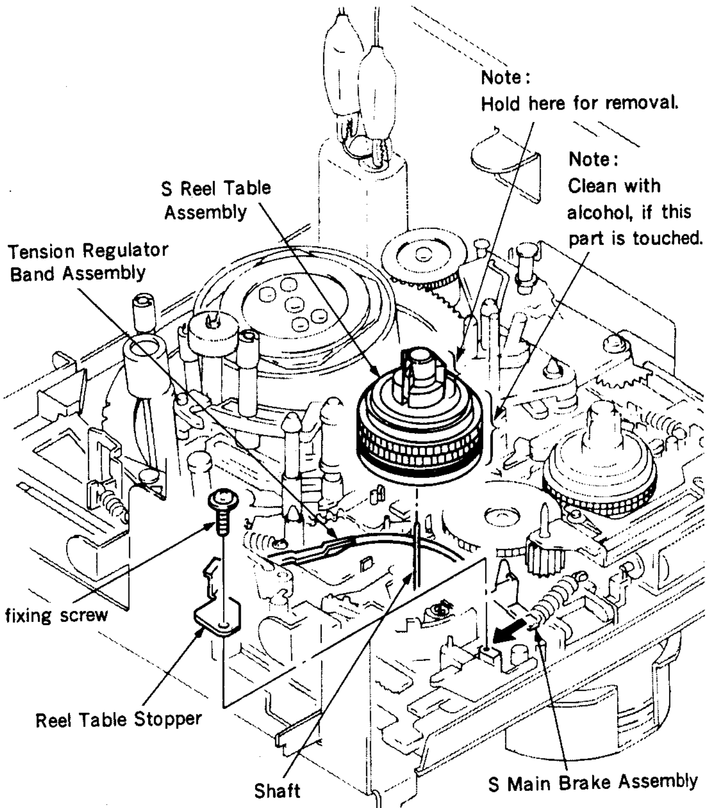
(3) Install the new S Reel Table Assembly while being carefull not to pinch the Tension Regulator Band Assembly.

(4) Install the Reel Table Stopper and tighten it with the fixing screw.

(5) Press the M-mode select button of the Mode Selector and set to the LOADING/UNLOADING mode.

(6) After replacement, perform the FWD running more than two minutes. Then, perform the FWD Back Tension Adjustment referring to Section 5-5.

(7) Install the Cassette-up Compartment Assembly referring to Section 2-3.


Note:
Hold here for removal.
Note:
Clean with alcohol, if this part is touched.
S Reel Table Assembly
Tension Regulator Band Assembly
fixing screw
Reel Table Stopper
Shaft
S Main Brake Assembly

4-14. REPLACEMENT OF THE T REEL TABLE ASSEMBLY

Tools: Mode Selector (Ref. No. J-13)
Sony Oil

Removal:

(1) Remove the Cassette-up Compartment Assembly referring to Section 2-3.

(2) Press the L-mode select button of the Mode Selector and set to the UNLOADING WAIT mode.

(3) Hook the spring which is hooked on the T.S Brake Assembly to the claw of the Lock Slider Assembly.

(4) Remove the stopper washer and remove the T.S Brake Assembly.

(5) Press the M-mode select button of the Mode Selector and set to the EJECT mode.

(6) Move the Drive Gear B Assembly in the direction of the arrow.

(7) Remove the T Reel Table Assembly.

Note: Be sure to hold the upper reel claw when removing the T Reel Table. (Note of figure)

Installation:

(1) Apply a half drop of oil on the top point of the Reel Shaft.

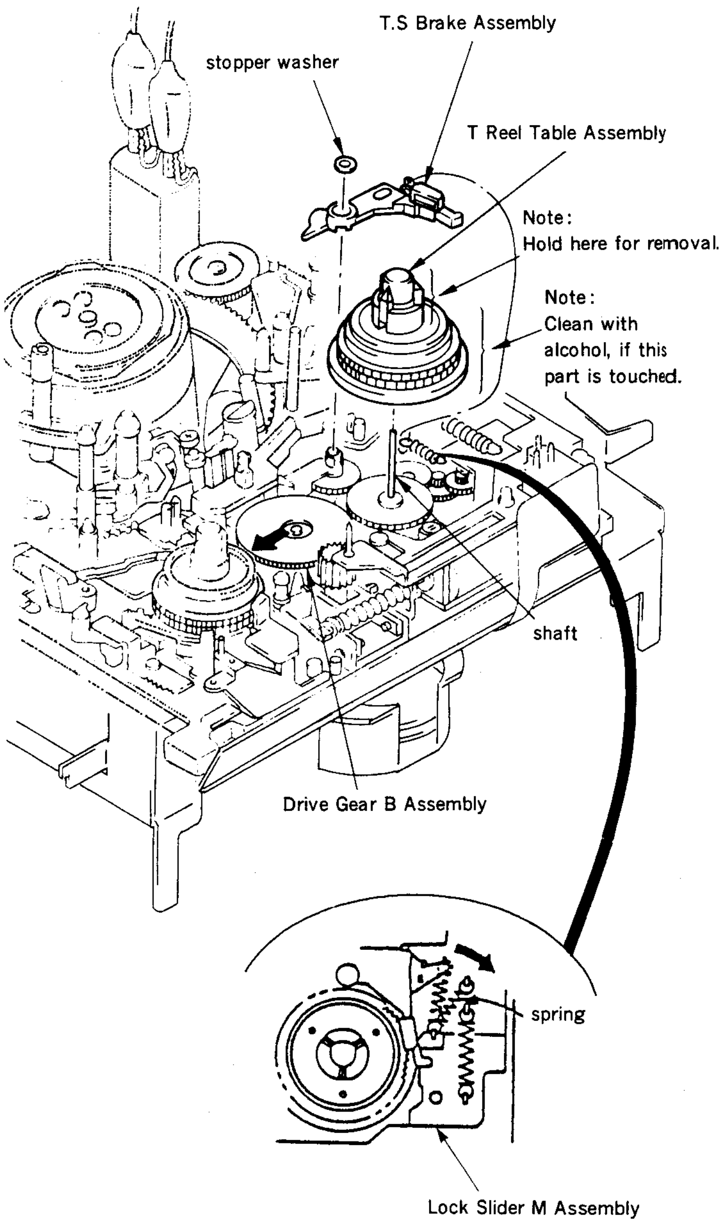
(2) Move the Drive Gear B Assembly in the direction of the arrow. (Check that the Mode Selector sets to EJECT mode.)

(3) Replace the T Reel Table Assembly with a new one.

(4) Assemble the parts with Steps (4) and (5) in reverse order.

(5) Set the L-mode to LOADING TOP mode and set the M-mode to LOADING/UNLOADING mode.

(6) Install the Cassette-up Compartment Assembly referring to Section 2-3.


T.S Brake Assembly
stopper washer
T Reel Table Assembly
Note:
Hold here for removal.
Note:
Clean with alcohol, if this part is touched.
shaft
Drive Gear B Assembly
spring
Lock Slider M Assembly

4-15. REPLACEMENT OF THE PINCH PRESS ARM ASSEMBLY

Tool: Sony Oil

Removal:

(1) Open the MB-19 Board referring to Section 2-5-5.

(2) Hook the spring which is hooked to the Spring Hook Assembly to the Pinch Press Assembly as shown in the figure.

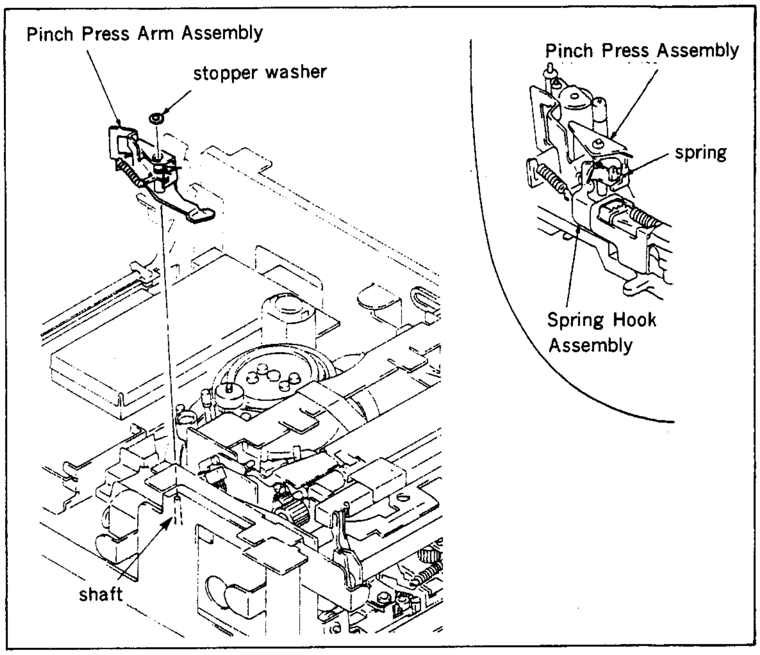
(3) Remove the stopper washer and remove the Pinch Press Arm Assembly.

Installation:

(1) Apply a half drop of oil on the shaft.

(2) Replace the Pinch Press Arm Assembly with a new one.

(3) Assemble the parts with Removal Steps (1) to (3) in reverse order.


Pinch Press Arm Assembly
stopper washer
Pinch Press Assembly
spring
Spring Hook Assembly
shaft

4-16. REPLACEMENT OF THE TENSION REGULATOR ARM ASSEMBLY

Tools: Mode Selector (Ref. No. J-13)
Sony Oil
Locking Compound

Removal:

(1) Remove the Cassette-up Compartment Assembly referring to Section 2-3.

(2) Hook the spring which is hooked to the Spring Hook Assembly to the Pinch Press Arm Assembly.

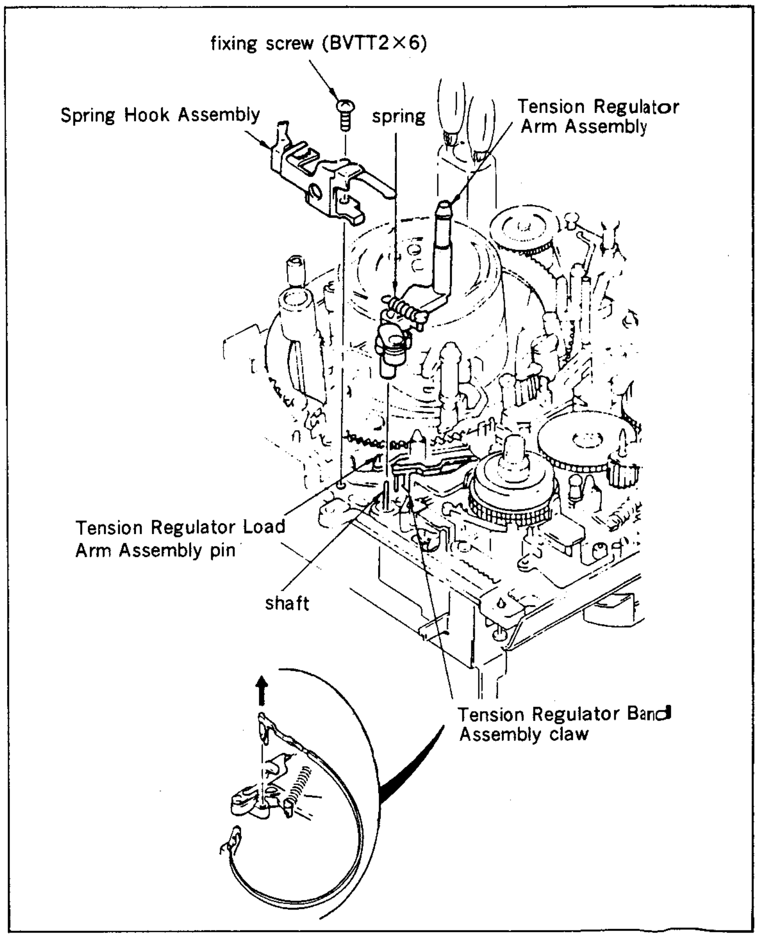
(3) Remove the spring which is hooked to the Tension Regulator Spring Hook Assembly.
(Make a note of the hooking position.)

(4) Remove the fixing screw and remove the Tension Regulator Spring Hook Assembly.

(5) Press the M-mode select button of the Mode Selector and set to the FF/REW mode.

(6) Remove the claw of the Tension Regulator Band Assembly.

(7) Remove the Tension Regulator Arm Assembly.


fixing screw (BVTT2×6)
Spring Hook Assembly
spring
Tension Regulator Arm Assembly
Tension Regulator Load Arm Assembly pin
shaft
Tension Regulator Band Assembly claw

Installation:

(1) Apply a half drop of oil on the shaft.

(2) Replace the Tension Regulator Arm Assembly with a new one.

(3) Install the Tension Regulator Arm Assembly while inserting the pin of the Tension Regulator Load Arm Assembly in the cam groove (on the back of the Arm) of the Tension Regulator Arm Assembly.

(4) Install the claw of the Tension Regulator Band Assembly.

Note: Do not touch the inside of the band and bend it.

(5) Press the M-mode select button of the Mode Selector and set to the $\boxed{\text{LOADING/UNLOADING}}$ mode.

(6) Install the Tension Regulator Spring Hook Assembly and tighten it with the fixing screw.

(7) Smear the Locking Compound to the head of the fixing screw.

(8) Assemble the Parts with Removal Steps (1) to (3) in reverse order.

Note: After replacement, perform the Tape Path Check referring to Section 6-6.

4-17. REPLACEMENT OF THE TENSION REGULATOR BAND ASSEMBLY

Tools: Mode Selector (Ref. No. J-13)
Cassette Tape
Dial Tension Gauge (Ref. No. J-6)
Tension Measurement Reel (30 mm dia.) (Ref. No. J-7)

Removal:

(1) Remove the Cassette-up Compartment Assembly referring to Section 2-3.

(2) Remove the S Reel Table Assembly referring to Section 4-13.

(3) Release the claw of the Band Arm and remove one side of the Tension Regulator Band Assembly.

(4) Release the claw from the Tension Regulator Arm Assembly and remove the Tension Regulator Band Assembly.

Installation:

(1) Replace the Tension Regulator Band Assembly with a new one.

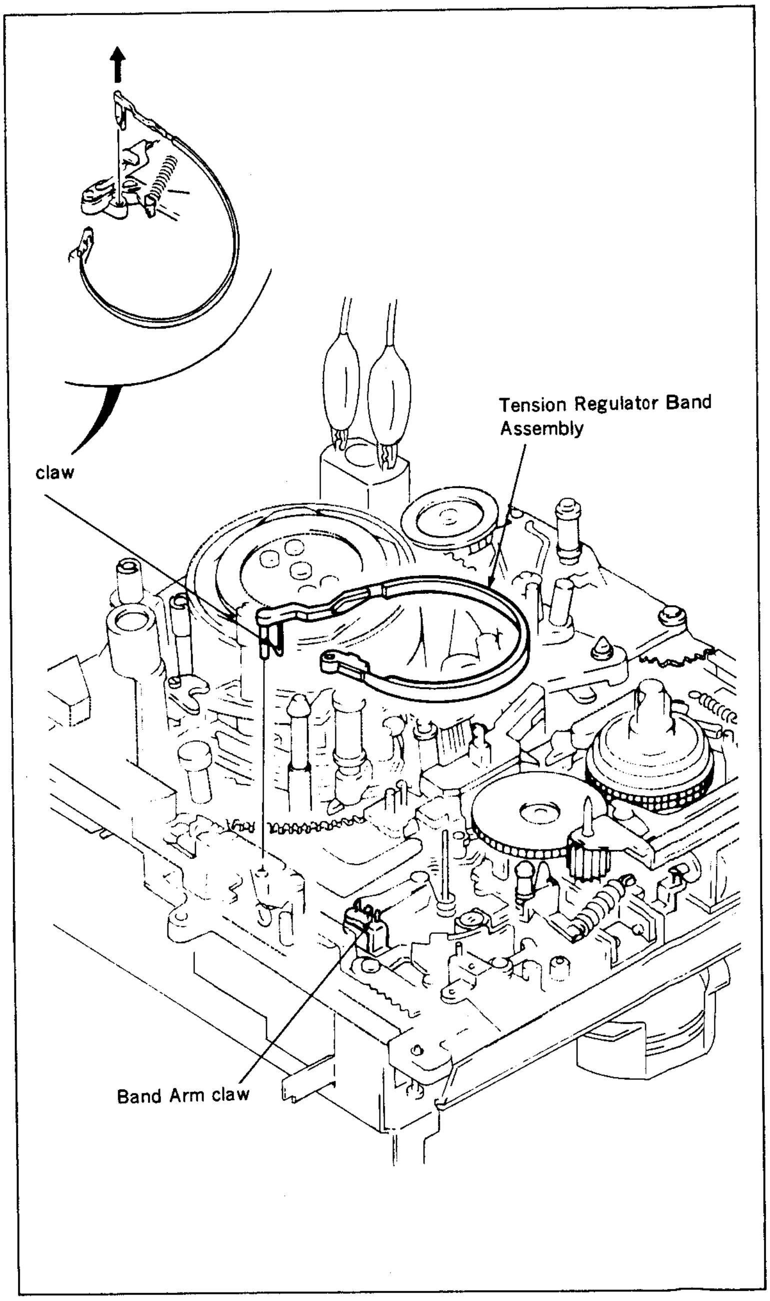
(2) Install the Tension Regulator Band Assembly with Removal Steps (3) and (4) in reverse order.

Note: Do not touch the inside of the band and bend it.

(3) Install the S Reel Table Assembly referring to Section 4-13.

(4) After replacement, perform the FWD running more than two minutes and then perform the FWD Back Tension Adjustment referring to Section 5-5.

(5) Install the Cassette-up Compartment Assembly referring to Section 2-3.



4-18. REPLACEMENT OF THE L SLIDER ASSEMBLY

Tools: Mode Selector (Ref. No. J-13)
Sony Grease

Removal:

(1) Remove the Cassette-up Compartment Assembly referring to Section 2-3.

(2) Remove the Fly Wheel referring to Section 4-1.

(3) Remove the Threading Ring Assembly referring to Section 4-4.

(4) Remove the Entrance Guide (P) Assembly referring to 4-10.

(5) Remove the Slant Guide Block Assembly referring to Section 4-11.

(6) Press the L-mode select button of the Mode Selector and set to the DRUM START mode.

(7) Remove the Slant Guide Drive Gear.

(8) Remove the two stopper washers from the L Slider Assembly.

(9) While pushing the projection of the RL Arm Assembly in the direction of the arrow, lift the right side of the L Slider Assembly and remove it from the shaft.

(10) Lift the right side of the L Slider Assembly as shown in figure 2 and remove the pin of the Tension Regulator Load Arm Assembly from the cam groove of the Tension Regulator Arm Assembly, and then remove the L Slider Assembly.

(11) Remove the stopper washer and remove the Tension Regulator Load Arm Assembly.

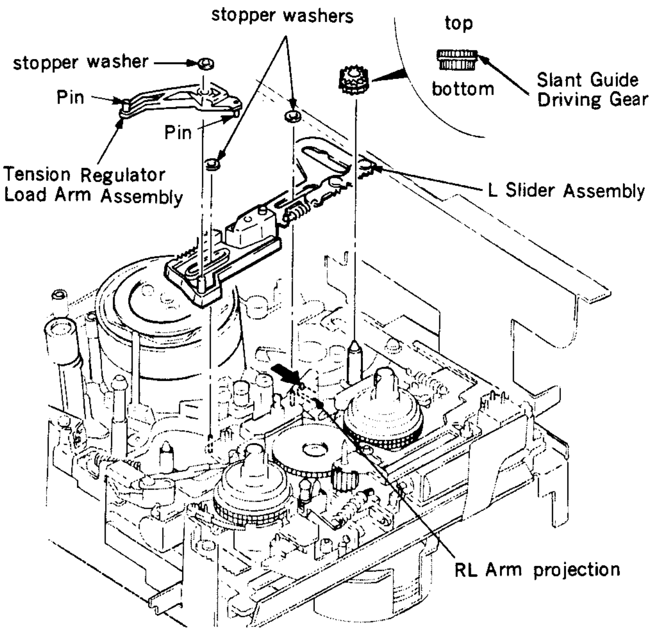

stopper washers
top
stopper washer
Pin
bottom
Slant Guide Driving Gear
Pin
Tension Regulator Load Arm Assembly
L Slider Assembly
RL Arm projection

Fig. 1

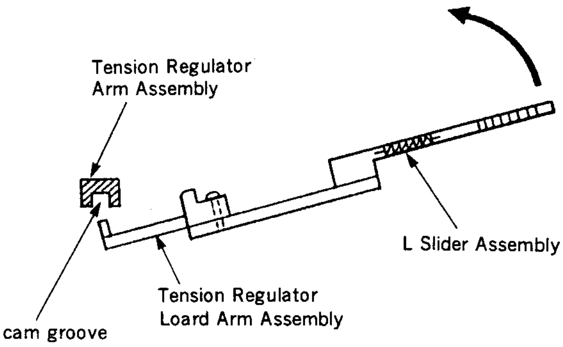

Tension Regulator Arm Assembly
L Slider Assembly
Tension Regulator Loard Arm Assembly
cam groove

Fig. 2

Installation:

(1) Replace the L Slider Assembly with a new one and smear Sony Grease to the three longitudinal holes as shown in figure 3.

(2) Assemble the parts with Removal Steps (8) to (11) in reverse order.

Note: When inserting the pin of the Tension Regulator Load Arm Assembly in the cam groove of the Tension Regulator Arm Assembly, insert the another pin into the groove of the M Slider.

(3) Press the L-mode select button of the Mode Selector and align the right edges of the L Slider Assembly and the Lock Slider M Assembly. (fig. 4)

(4) Engage the Slant Guide Drive Gear with L Slider Assembly so that the notch of the Drive Gear is 1 tooth away from the left and gear of the L Slider Assembly as shown in the figure 4.

(5) Assemble the parts with Removal Steps (1) to (5) in reverse order.

Note: After replacement, perform the Tape Path Adjustment referring to Section 6.

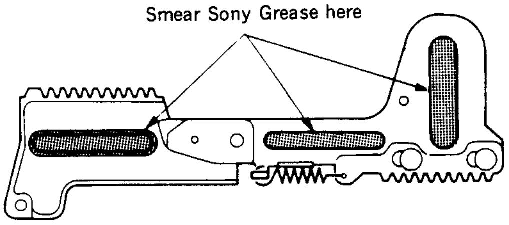

Smear Sony Grease here

Fig. 3

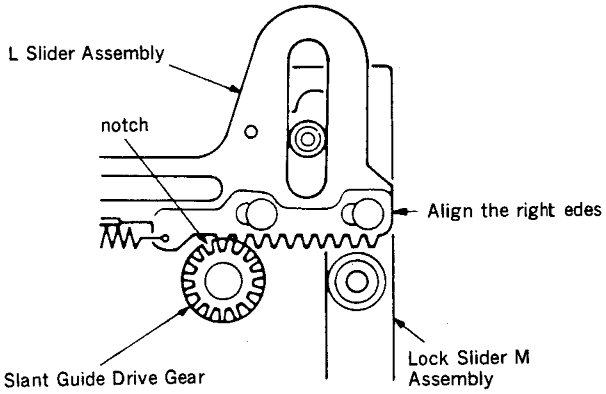

L Slider Assembly
notch
Align the right edes
Slant Guide Drive Gear
Lock Slider M Assembly

Fig. 4

4-19. REPLACEMENT OF THE L-SWITCH ASSEMBLY

Tools: Mode Selector (Ref. No. J-13)
Sony Oil
Sony Grease

Removal:

(1) Remove the Cassette-up Compartment Assembly referring to Section 2-3.

(2) Remove the Fly Wheel referring to Section 4-1.

(3) Remove the Threading Ring Assembly referring to Section 4-4.

(4) Remove the Entrance Guide (P) Assembly referring to Section 4-10.

(5) Remove the Slant Guide Block Assembly referring to Section 4-11.

(6) Remove the L Slider Assembly referring to Section 4-18.

(7) Remove the Lock Slider Retainer.

(8) Remove the tension spring which is hooked to the Lock Slider A.

(9) Remove the fixing screw and remove the Lock Slider A.

(10) Remove the stop washer of the Drive Changer Assembly and remove the torsion spring.

(11) Remove the Drive Changer Assembly.

(12) Disconnect the connector (6P) on the L-switch Assembly.

(13) Remove the two fixing screws and remove the L-switch Assembly.

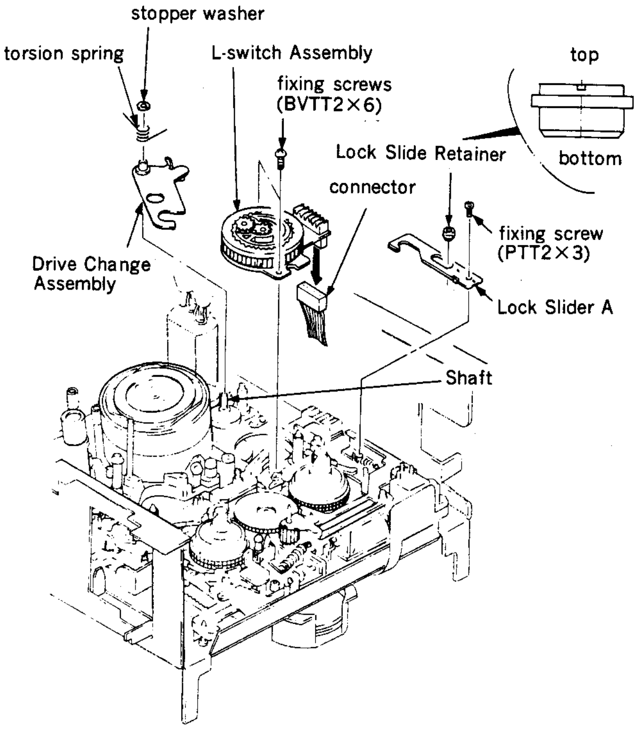

stopper washer
torsion spring
L-switch Assembly
top
fixing screws
(BVTT2×6)
Lock Slide Retainer
bottom
connector
fixing screw
(PTT2×3)
Drive Change
Assembly
Lock Slider A
Shaft

Fig. 1

Installation:

(1) Replace the L-switch Assembly with a new one and apply a half drop of oil on the Planetary Roller Shaft.

(2) Assemble the parts with Removal Steps (12) and (13) in reverse order.

(3) Press the L-mode select button (right or left) of the Mode Selector and check that the L-switch Assembly rotates.

(4) Apply a half drop of oil on the fixing shaft of the Drive Changer Assembly.

(5) Smear Sony Grease to the U groove of the Drive Changer Assembly as shown in figure 2.

(6) Assemble the parts with Removal Steps (10) and (11) in reverse order.

(7) Press the L-mode select button (right or left) of the Mode Selector and check that the L-switch Assembly rotates.

(8) Assemble the parts with Removal Steps (7) to (9) in reverse order.

(9) Press the L-mode select button (righ or left) of the Mode Selector so that the Planetary Roller Shaft is placed to the position shown in figure 3.

(10) Assemble the parts with Removal Steps (1) to (6) in reverse order.

Note: After replacement, perform the Tape Path Adjustment referring to Section 6.

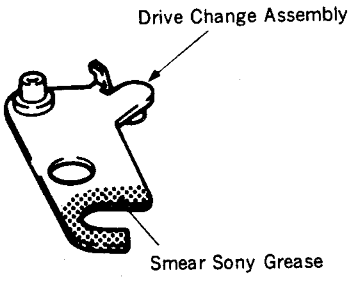

Drive Change Assembly
Smear Sony Grease

Fig. 2

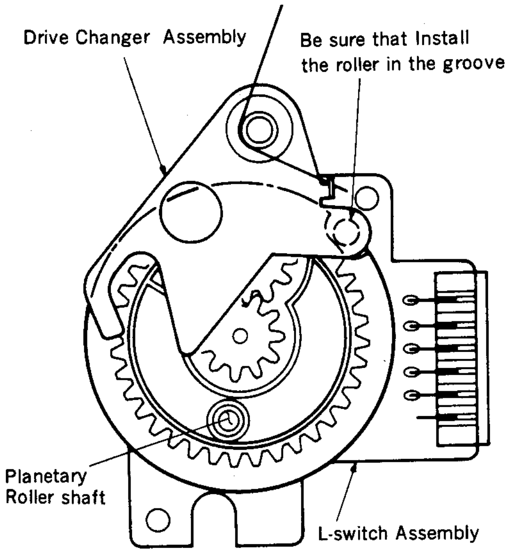

Drive Changer Assembly
Be sure that Install the roller in the groove
Planetary Roller shaft
L-switch Assembly

Fig. 3

4-20. REPLACEMENT OF THE PLUNGER SOLENOID

Removal:

(1) Open the MB-19 Board referring to Section 2-5-5.

(2) Remove the Cassette-up Compartment Assembly referring to Section 2-3.

(3) Remove the spring which is hooked to the Lock Slider M Assembly.

(4) Remove the two stopper washers.

(5) Remove the fixing screw and remove the Lock Slider M Assembly.

(6) Unsolder the three terminals of the Plunger Solenoid of the FP-206 Board.

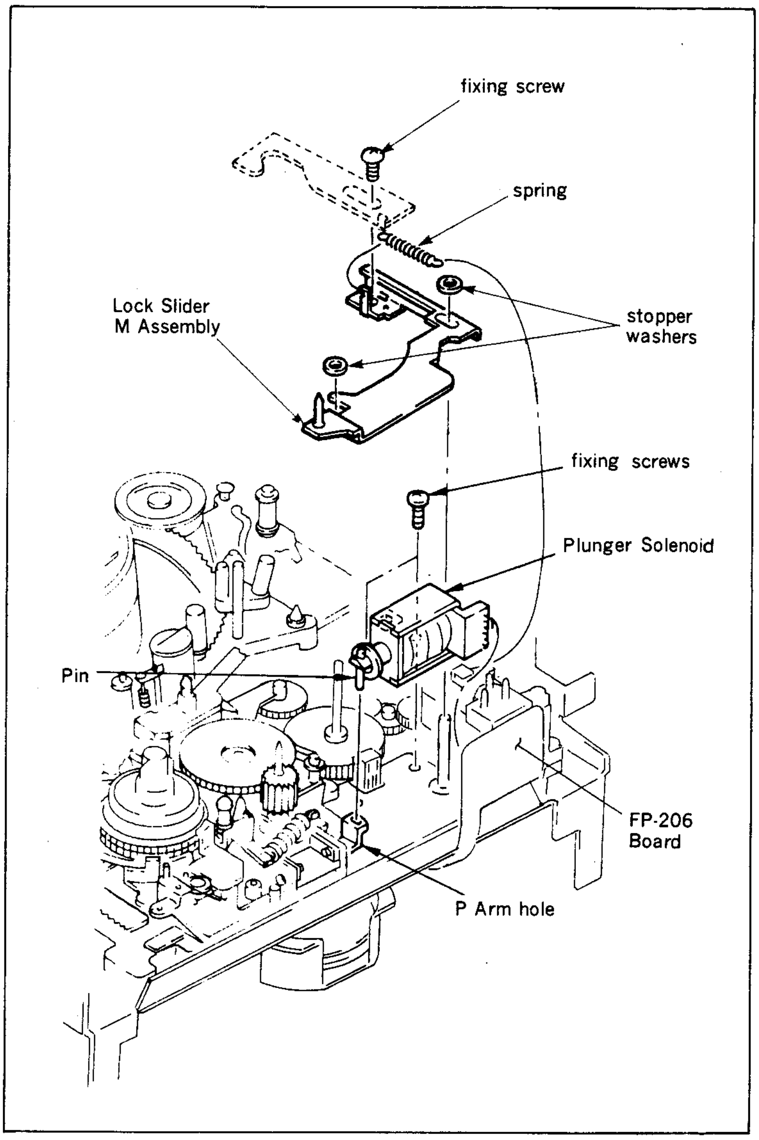
(7) Remove the two fixing screws and remove the Plunger Solenoid. (At this time, be careful not to damage the T Reel Assembly with a screwdriver, and do not touch it.)

Installation:

(1) Replace the Plunger Solenoid with a new one.

(2) Insert the pin of the Plunger Solenoid into the hole of the P Arm and install the new Plaunger Solenoid with the two fixing screws. (At this time, be careful not to damage the T Reel Assembly with a screwdriver and do not touch it.)

(3) Assemble the parts with Removal Steps (1) to (6) in reverse order.


fixing screw
spring
Lock Slider
M Assembly
stopper washers
fixing screws
Plunger Solenoid
Pin
FP-206 Board
P Arm hole

4-21. REPLACEMENT OF THE M-SWITCH ASSEMBLY

Tools: Mode Selector (Ref. No. J-13)
Sony Oil

Removal:

(1) Remove the Cassette-up Compartment Assembly referring to Section 2-3.

(2) Disconnect the connector (CN301) on the RS-31 Board.

(3) Remove the T Reel Table Assembly referring to Section 4-14.

(4) Remove the stopper washer and remove the Drive Gear B Assembly.

(5) Remove the LD-1 Board. (fig. 1)

(6) Remove the Lock Slider M Assembly referring to Removal Steps (3) to (5) of Section 4-20.

(7) Remove the tension spring and remove the B Release Arm Assembly.

(8) Check that the M-mode is put into $\boxed{\text{EJECT}}$ mode.

(9) Remove the stopper washer and remove the Mode Output Gear.

(10) Release the two claws of the Control Motor Cover and remove the Push Switch.

(11) Disconnect the connctor (6P) on the M-switch Assembly.

(12) Remove the two fixing screws and remove the Control Motor Cover L.

(13) Remove the fixing screw and while lifiting up the M-switch Assembly, push the T.S Release Arm in the direction of the arrow A. Then push the T Main Brake Assembly in the direction of the arrow B and remove the M-switch Assembly.

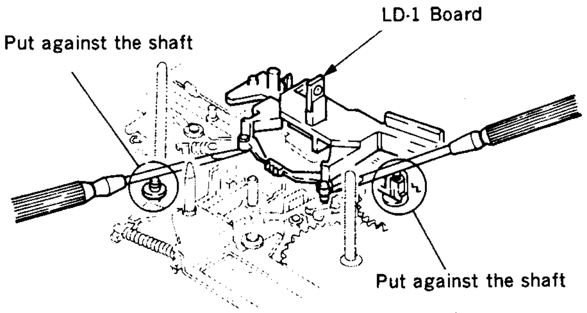

LD-1 Board
Put against the shaft
Put against the shaft

Fig. 1

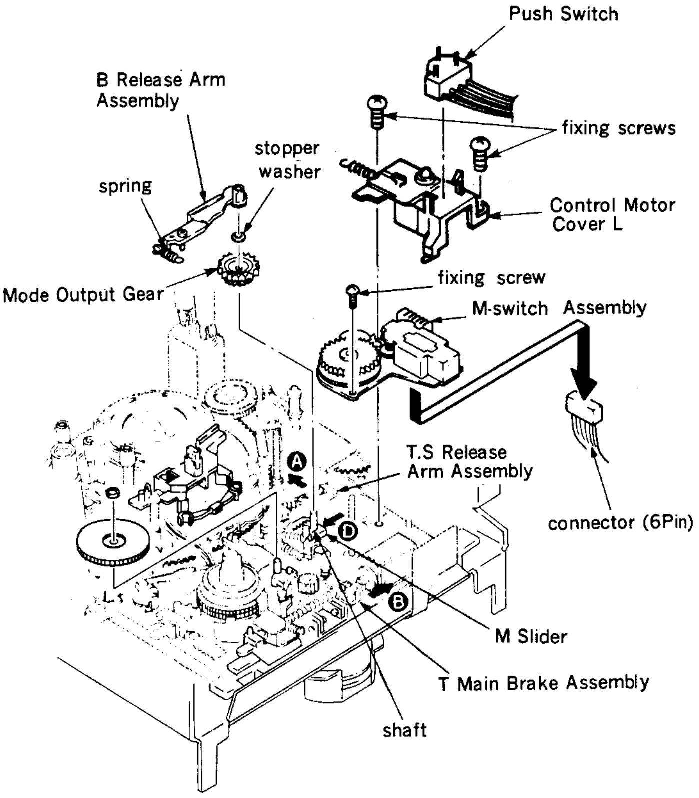

Push Switch
B Release Arm Assembly
fixing screws
stopper washer
spring
Control Motor Cover L
fixing screw
Mode Output Gear
M-switch Assembly
A
T.S Release Arm Assembly
D
connector (6Pin)
B
M Slider
T Main Brake Assembly
shaft

Fig. 2

How to removal the DC Motor:

(1) Unsolder the two terminals at the C points as shown in figure 3 and remove the DC Motor from the MS-4 Board. (fig. 3)

Installation:

(1) Replace the M-switch Assembly with a new one.

(2) Assemble the parts with Removal Steps (10) to (13) in reverse order.

(3) Check that the mechanical block is put into EJECT mode.

(4) Check that the M Slider moves fully in the direction of arrow D. (fig. 2)

(5) Apply a half drop of oil on the shaft of the Mode Output Gear. (fig. 2)

(6) Install the Mode Output Gear so that the center of the M-switch Assembly Gear and the two positioning holes are lined up. (fig. 4)

(7) Install the stopper washer to the shaft of the Mode Output Gear.

(8) Press the M-mode select button of the Mode Selector and set to the LOADING/UNLOADING mode.

(9) Assemble the parts with Removal Steps (1) to (7) in reverse order.

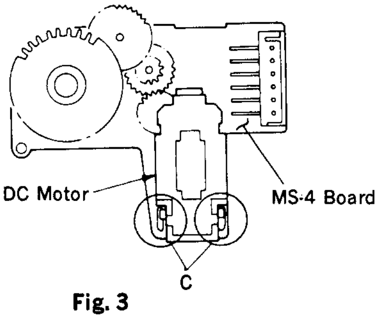

DC Motor
MS-4 Board
C

Fig. 3

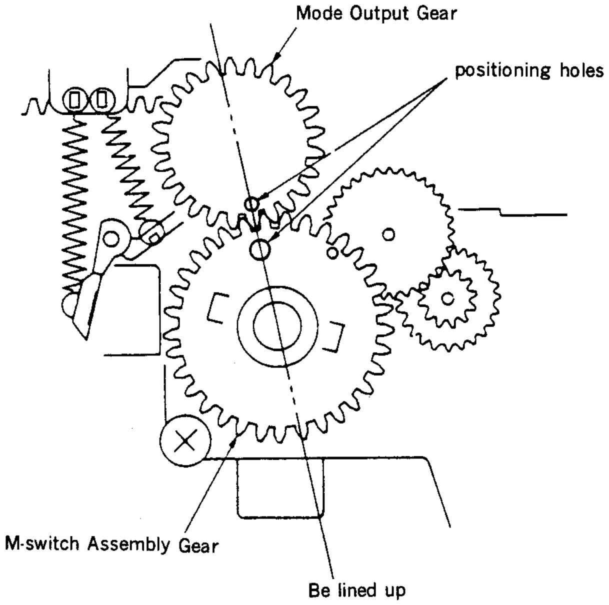

Mode Output Gear
positioning holes
M-switch Assembly Gear
Be lined up

Fig. 4

4-22. REPLACEMENT OF THE M SLIDER

Tools: Mode Selector (Ref. No. J-13)
Sony Oil
Sony Grease

Removal:

(1) Remove the Cassette-up Compartment Assembly referring to Section 2-3.

(2) Remove the Threading Ring Assembly referring to Section 4-4.

(3) Remove the S Reel Table Assembly referring to Section 4-13.

(4) Remove the T Reel Table Assembly referring to Section 4-14.

(5) Remove the Pinch Press Arm Assembly referring to Section 4-15.

(6) Remove the Tension Regulator Arm Assembly referring to Section 4-16.

(7) Remove the Tension Regulator Band Assembly referring to Section 4-17.

(8) Remove the Drive Gear (B) Assembly, LD-1 Board, Lock Slider M Assembly and B Release Arm Assembly referring to Removal Steps (2) to (7) of Section 4-21.

(9) Remove the Tension Regulator Load Arm Assembly referring to Removal Step (11) of Section 4-18.

(10) Remove the tension spring which is hooked to the S Main Brake Assembly.

(11) Remove the two stopper washers and remove the S Main Brake Assembly and T Main Brake Assembly.

(12) Operate the Mode Selector and set the L-mode to LOADING TOP mode and the M-mode to LOADING/UNLOADING mode.

(13) Remove the fixing screw and remove the Drive Complete Assembly.

(14) Remove the Mode Output Gear referring to Removal Steps (8) and (9) of Section 4-21.

(15) Remove the two tension springs which are hooked to the REW Brake Assembly and B Release Slider.

(16) Remove the REW Brake Assembly and remove the REW Brake Spacer.

(17) Remove the stopper washer and remove the B Release Slider.

(18) Remove the stopper washer and remove the Ring Lock Spring and RL Arm.

(19) Move the M Slider to the right. Leave about 5mm space between the fixing shaft and left edge of M Slider's longitudinal hole.

(20) Remove the E ring and remove the Pinch Press Lever Assembly.

(21) Remove the tension spring and remove the Hard Brake S.

(22) Remove the stopper washer and push the Mode Arm in the direction of the arrow. Lift up the left side of the M Slider to remove.

Installation:

(1) Replace the M Slider with a new one and smear grease. (fig. 2)

(2) Push the Mode Arm in the direction of the arrow. (fig. 1) While being careful to the positional relationship with other parts install the M Slider. Then install the stopper washer. (fig. 3)

(3) Install the Hard Brake S and hook the tension spring to it.

(4) Smear grease to the Pinch Press Lever Assembly. (fig. 4)

(5) Apply a half drop of oil to the part under the groove of Pinch Press Lever Assembly's shaft.

(6) Assemble the parts with Removal Steps (16) to (18) and (20) in reverse order.

(7) Hook the two tension springs to the REW Brake Assembly and B Release Slider.

Note: Hook the two tension springs as follows and be careful not to mix them.

- B Release Slider Spring: diameter 2 mm, wire diameter 0.18mm
- REW Brake Assembly Spring: diameter 1.6 mm, wire diameter 0.12mm

(8) Move the M Slider to the left fully.

(9) Press the M mode select button of the Mode Selector and set to EJECT mode.

(10) Install the Mode Output Gear referring to Instllation Steps (5) to (7) in Section 4-21.

(11) Press the M mode select button of the Mode Selector and set to the LOADING/UNLOADING mode.

(12) Insert the horizontal shaft of the Drive Complete Assembly into the groove of the Upper and Lower Selection Arm and tighten the fixing screw.

(13) Assemble the parts with Removal Steps (1) to (11) in reverse order.

Note: After replacement, perform the Tape Path Check referring to Section 6-6.

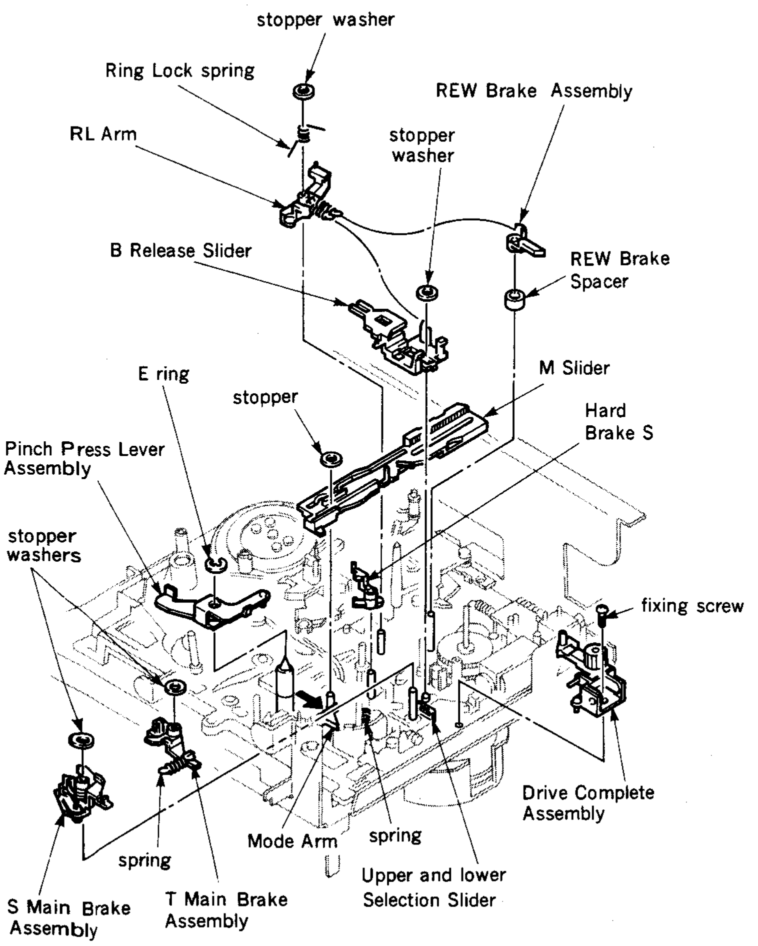

stopper washer
Ring Lock spring
RL Arm
REW Brake Assembly
stopper washer
B Release Slider
REW Brake Spacer
E ring
stopper
M Slider
Hard Brake S
Pinch Press Lever Assembly
stopper washers
fixing screw
Drive Complete Assembly
Mode Arm
spring
spring
Upper and lower Selection Slider
S Main Brake Assembly
T Main Brake Assembly

Fig. 1

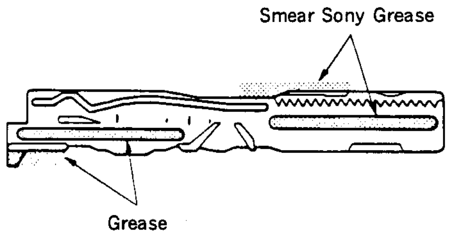

Smear Sony Grease
Grease

Fig. 2

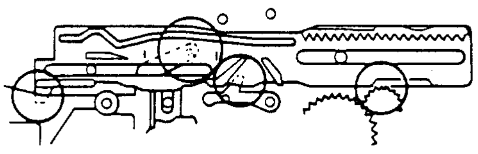


Fig. 3

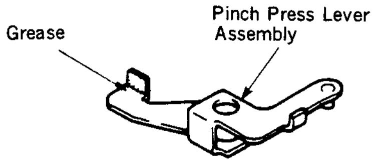

Grease
Pinch Press Lever Assembly

Fig. 4

4-23. INSTALLATION OF THE BLOCK PLATE ASSEMBLY

When removing the Block Plate Assembly, installing procedures are as follows:

(1) Push the Lock Slider Assembly in the direction of the arrow and lift the Cassette Holder.

(2) Check that the positional relationship between the Lock Lever and pin is as shown in figure A.

(3) Turn the Worm Gear in the direction of the arrow and engage the Gear B and Gear C.

(4) While checking that positional relationship between the pin of the Gear Lever Assembly and Lock Lever is as shown in figure B, fix the Block Plate Assembly and Blacket (LEFT) with three fixing screws.

(5) Check that the Gear C and D are engaged.

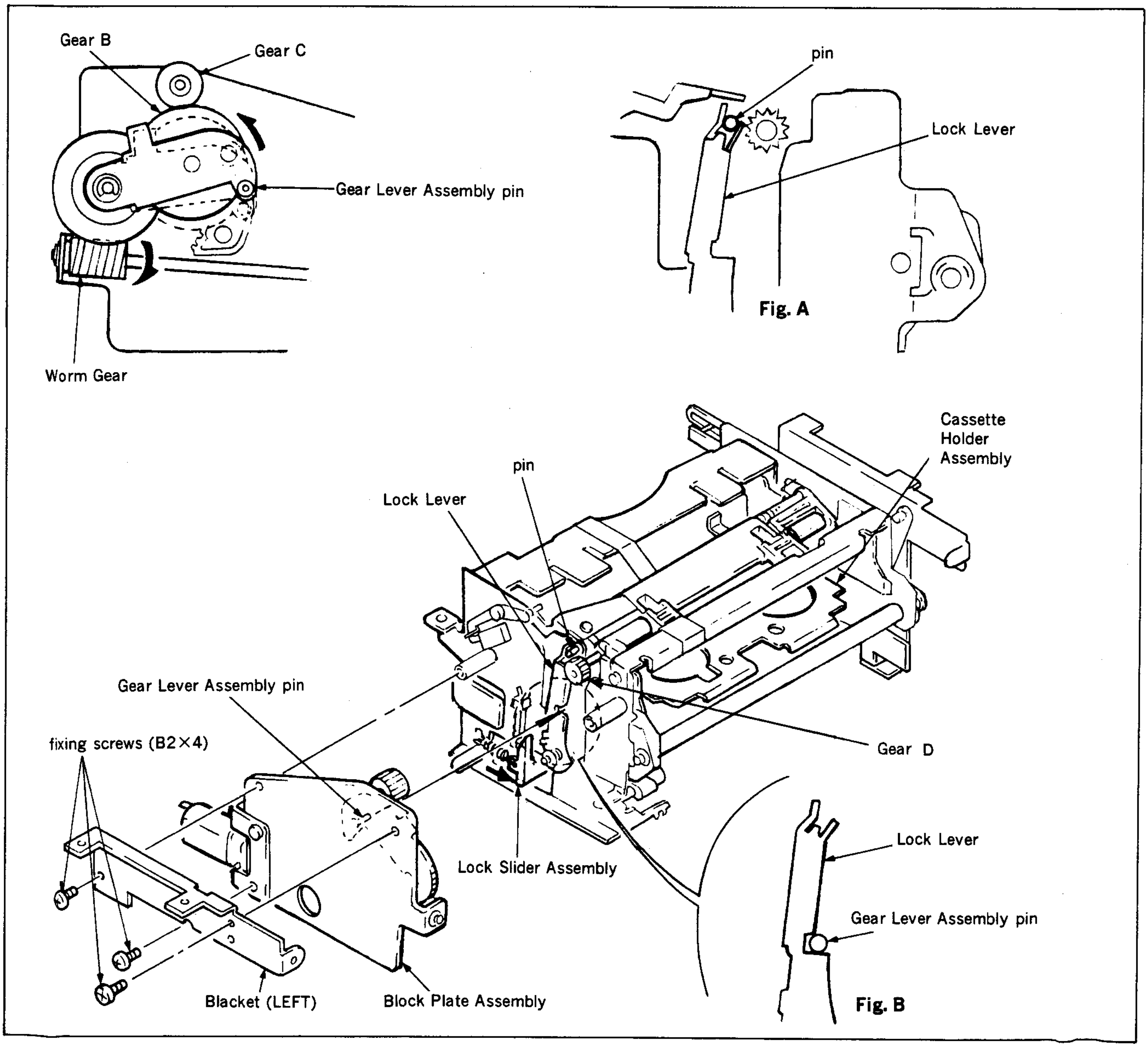

Gear B
Gear C
Gear Lever Assembly pin
Worm Gear
pin
Lock Lever
Cassette Holder Assembly
pin
Lock Lever
Gear Lever Assembly pin
fixing screws (B2×4)
Gear D
Lock Slider Assembly
Lock Lever
Gear Lever Assembly pin
Blacket (LEFT)
Block Plate Assembly

Fig. A

Fig. B

4-24. PARALLELISM ADJUSTMENT OF THE CASSETTE HOLDER BLOCK

When the following trouble happen, perform this adjustment. When inserting or ejecting the cassette, it is caught in the Cassette Holder Assembly or Joint Assembly, etc., and does not move smoothly.

Adjustment procedure:

(1) Open the MB-19 Board referring to Section 2-5-5.

(2) Remove the Cassette-up Compartment Assembly referring to Section 2-3.

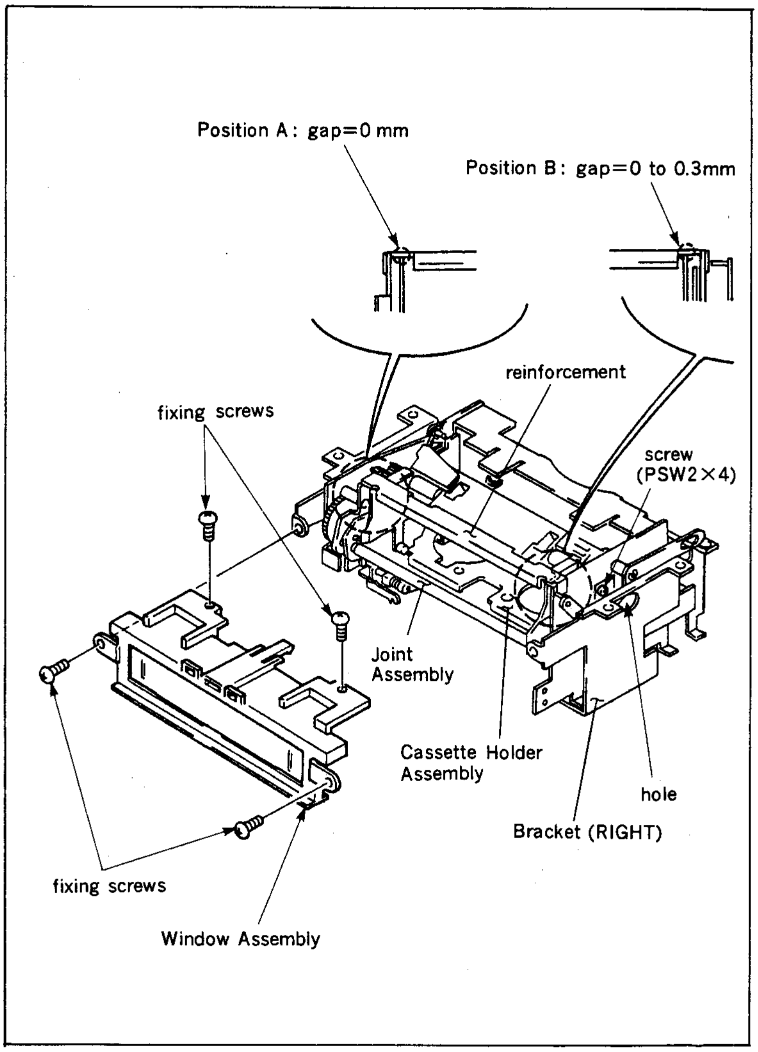
(3) Remove the four fixing screws and remove the Window Assembly.

(4) Loosen the screw (PSW2 X 4) from the hole of the Braket (RIGHT).

(5) Push the bottom of the Cassette Holder Assembly against the reinforcement, and adjust the position so that there is no clearance at points A and B.

(6) Tighten the screw (PSW2 X 4) and smear locking compound to it.

(7) Assemble the parts with Steps (1) to (3) in reverse order.


Position A: gap=0 mm
Position B: gap=0 to 0.3mm
reinforcement
fixing screws
screw
(PSW2×4)
Joint Assembly
Cassette Holder Assembly
hole
Bracket (RIGHT)
fixing screws
Window Assembly

SECTION 5
TORQUE AND BACK TENSION ADJUSTMENT

After removing the Mechanical Deck and Cassette-up Comparment from the unit referring to Section 2-2 and 2-3, perform these adjustments except for Section 5-4.

5-1. CHECK OF THE MAIN BRAKE TORQUE

5-1-1. S Main Brake Torque

Tools: Mode Selector (Ref. No. J-13)
Tension Measurement Reel
(Ref. No. J-8)
Dial Tension Gauge (Ref. No. J-6)

Mode: Press the M-mode select button of the Mode Selector and set to the FF/REW mode.

Check Procedure:

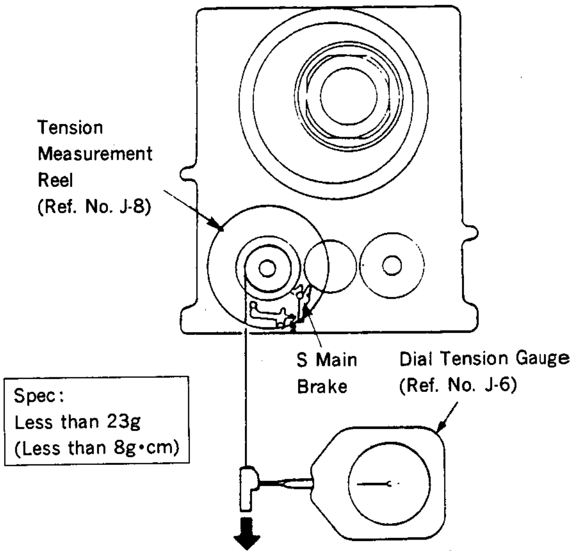
(1) Set the Tension Measurement Reel on the S Reel Table and put the Dial Tension Gauge at the end of the string.

(2) Pull out the Dial Tension Gauge in the direction of the arrows and check that those readings meet the required specifications as shown in figure 1 and 2.

Note: Both S Main Brake and S Soft Brake work in the FF/REW mode.

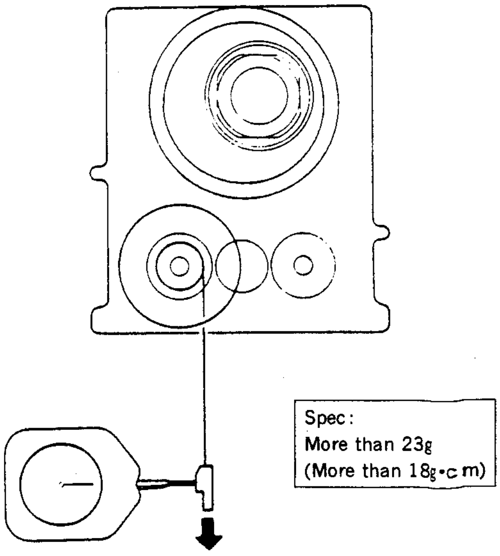
Adjustment Procedure:

(1) If the reading do not meet the required specification, replace the S Main Brake or S Reel Table Assembly.



Spec:
Less than 23g
(Less than 8g•cm)

Fig. 1



Spec:
More than 23g
(More than 18g•cm)

Fig. 2

5-1-2. T Main Brake Torque

Tools: Mode Selector (Ref. No. J-13)
Tension Measurement Reel
(Ref. No. J-8)
Dial Tension Gauge (Ref. No. J-6)

Mode: Press the M-mode select button of the Mode Selector and set to the FF/REW mode.

Check Procedure:

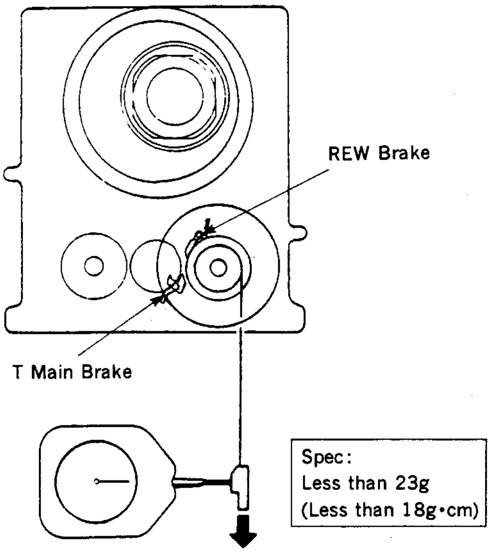
(1) Set the Tension Measurement Reel on the T Reel Table and put the Dial Tension Gauge at the end of the string.

(2) Pull out the Dial Tension Gauge in the direction of the arrows and check that these readings meet the required specifications as shown in figure 1 and 2.

Note: Both T Main Brake and REW Brake work in the FF/REW mode.

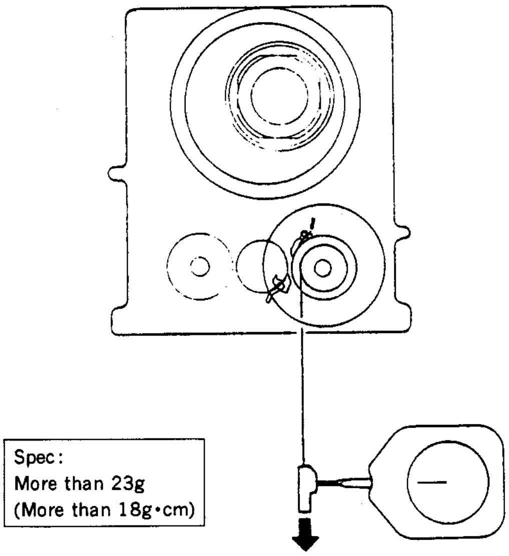
Adjustment Procedure:

(1) If the reading do not meet the required specification, replace T Main Brake or T Reel Table.



Spec:
Less than 23g
(Less than 18g•cm)

Fig. 1



Spec:
More than 23g
(More than 18g•cm)

Fig. 2

5-2. CHECK OF THE SOFT BRAKE TORQUE

5-2-1. S Side Soft Brake Torque

Tools: Mode Selector (Ref. No. J-13)
Tension Measurement Reel
(Ref. No. J-8)
Dial Tension Gauge (Ref. No. J-6)

Mode: Press the M-mode select button of the Mode Selector and set the FF/REW mode.

Check Procedure:

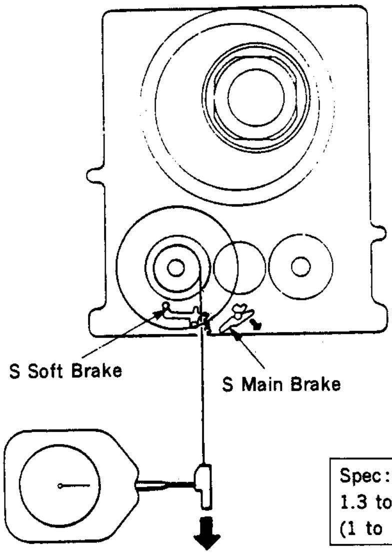
(1) Set the Tension Measurement Reel on the S Reel Table and put the Dial Tension Gauge at the end of the string.

(2) Release the S Main Brake by hand.

(3) While releasing the S Main Brake, pull out the Dial Tension Gauge in the direction of the arrow. Check that this reading meets the required specification.

Adjustment Procedure:

(1) Adjust the strength of S Soft Brake Spring by streching or cutting.



Spec:
1.3 to 3.8g
(1 to 3g·cm)

5-2-2. T Side Soft Brake Torque

Tools: Mode Selector (Ref. No. J-13)
Tension Measurement Reel
(Ref. No. J-8)
Dial Tension Gauge (Ref. No. J-6)

Mode: Press the M-mode button of the Mode Selector and set to the $\boxed{\text{RVS}}$ mode.

Check Procedure:

(1) Set the Tension Measurement Reel on the T Reel Table and put the Dial Tension Gauge at the end of the string.

(2) Release the T Main Brake by hand.

(3) While releasing the S Main Brake, pull out the Dial Tension Gauge in the direction of the arrow. Check that this reading meets the required specification.

Note: Both T Soft Brake and REW Brake work in the RVS mode.

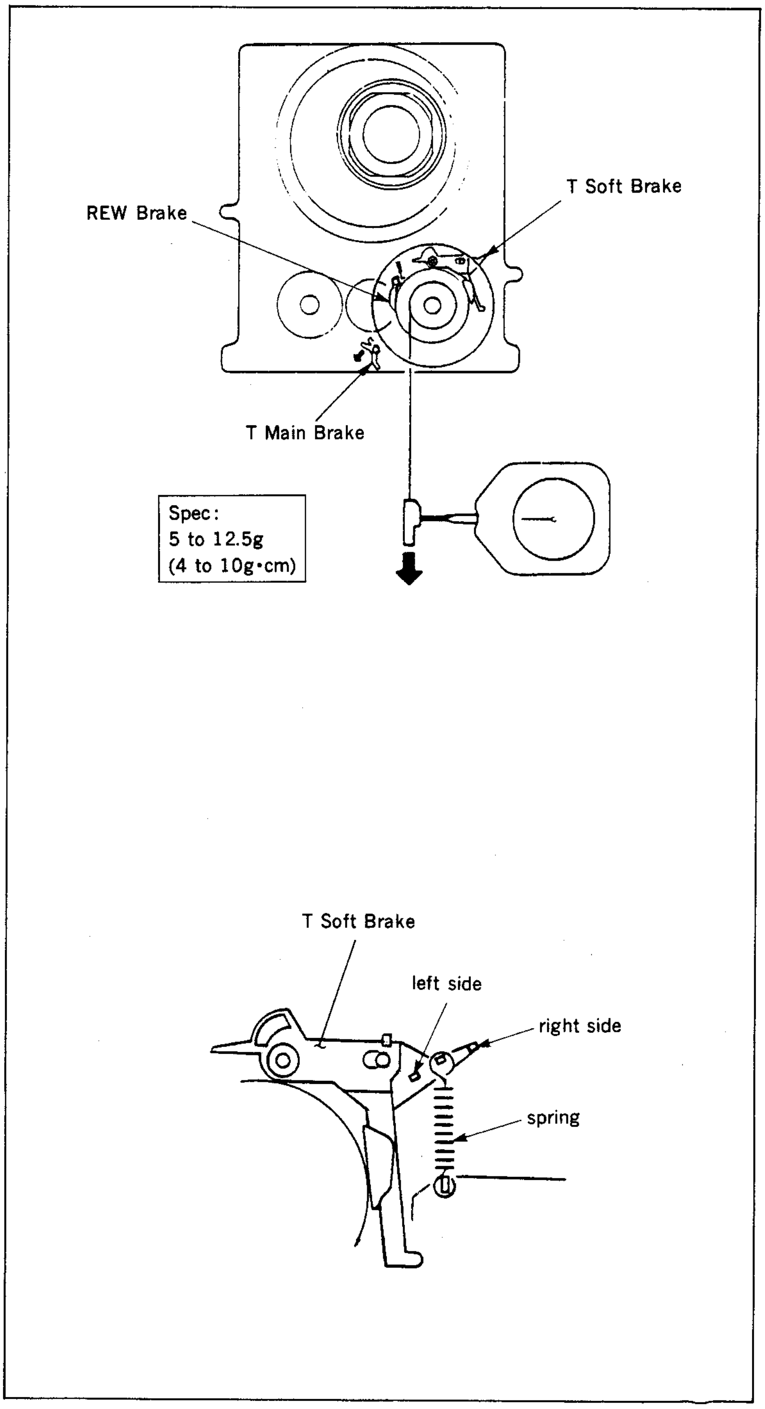
Adjustment Procedure:

(1) Change the position of the tension spring which is hooked to the T Soft Brake.

. more than the spec. : Hook the left side.

. less than the spec. : Hook the right side.

(2) If the reading do not meet the required specification with Step (1), replace the T Soft Brake or REW Brake, or both of them.



Spec:
5 to 12.5g
(4 to 10g·cm)

5-3. CHECK OF THE REW BRAKE TORQUE

Tools: Mode Selector (Ref. No. J-13)
Tension Measurement Reel
(Ref. No. J-8)
Dial Tension Gauge (Ref. No. J-6)

Mode: Press the M-mode select button of the Mode Selector and set to the FF/REW mode.

Check procedure:

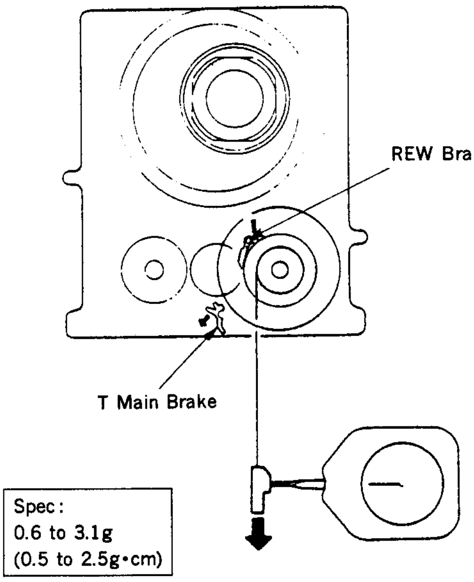
(1) Set the Tension Measurement Reel on the T Reel Table and put the Dial Tension Gauge at the end of the string.

(2) Release the T Main Brake by hand.

(3) While the releasing the T Main Brake, pull out the Dial Tension Gauge in the direction of the arrow. Check that this reading meet the required specification.

Adjustment Procedure:

(1) Adjust the strength of the tension spring by streching or cutting, or replace the REW Brake with a new one.



Spec :
0.6 to 3.1g
(0.5 to 2.5g•cm)

5-4. CHECK BY THE FWD, RVS TAKE-UP TORQUE CASSETTE

Tool: FWD, RVS take-up torque cassette
(Ref. No. J-12)

Mode: PLAY mode

Check Procedure:

(1) Insert the FWD, RVS take-up torque cassette in the unit.

(2) Put the unit into the PLAY mode, check that the torque reading of the T Reel Table meets the required specification.

Spec. : 9.5 to 15.5 g.cm

(3) Put the unit into the PLAY mode and press the REW button. Immediately check that the torque reading of the S Reel Table meets the required specification.

Spec. : 17 to 23 g.cm

Adjustment procedure:

(1) If the readings do not meet the required specifications, replace each Reel Table Assembly.

5-5. FWD BACK TENSION ADJUSTMENT

Tools: Mode Selector (Ref. No. J-13)
Tension Measurement Reel
(Ref. No. J-7)
Dial Tension Gauge (Ref. No. J-6)

Mode: Press the L-mode select button of the Mode Selector and set to the LOADING END Press the M-mode select button and set to the FWD mode.

Check Procedure:

(1) Remove the Cassette-up Compartment referring to Section 2-3.

(2) Press the L-mode select button of the Mode Selector and set to the LOADING END mode. Press the M-mode select button and set to the FWD mode.

(3) Loosen the fixing screw and move the Band Adjustment Plate in the direction of the arrow A. Check the possible movement range θ of the No. 1 Guide.

(4) Tighten the fixing screw where the No. 1 Guide Cap is positioned at one-third of θ .

(5) Set the Tension Measurement Reel on the S Reel Table and trail the tape along the No. 1 Guide, No. 2 Guide, No. 3 Guide, IP Roller Guide and Drum.

(6) Put the Dial Tension Geauge at the end of the tape. Pull out the Dial Tension Gauge at a contact speed approx. 15cm/sec. in the direction of the arrow B. At this time, check that this reading meets the required specification.

Spec. : 12 to 14 g

Adjustment Procudure:

(1) If the reading do not meet the required specification, change the position of the tension spring which is hooked to the Tension Regulator Spring Hook Assembly.
 . more than the Spec. :
 the direction of the arrow C
 . less than the Spec. :
 the direction of the arrow D

NOTE:

When replacing the parts as follows, perform the FWD Back Tension Adjustment.

. Tension Regulator Band Assembly
. S Reel Table Assembly
. Entrance Guide (P) Assembly

When replacing these parts, perform the free running in the FWD mode for two minutes and then adjust the FWD Back Tension.

Adjustment Procudure:

(1) Install the Cassette-up Compartment Assembly with Removal Steps Section 2-3 in reverse order.

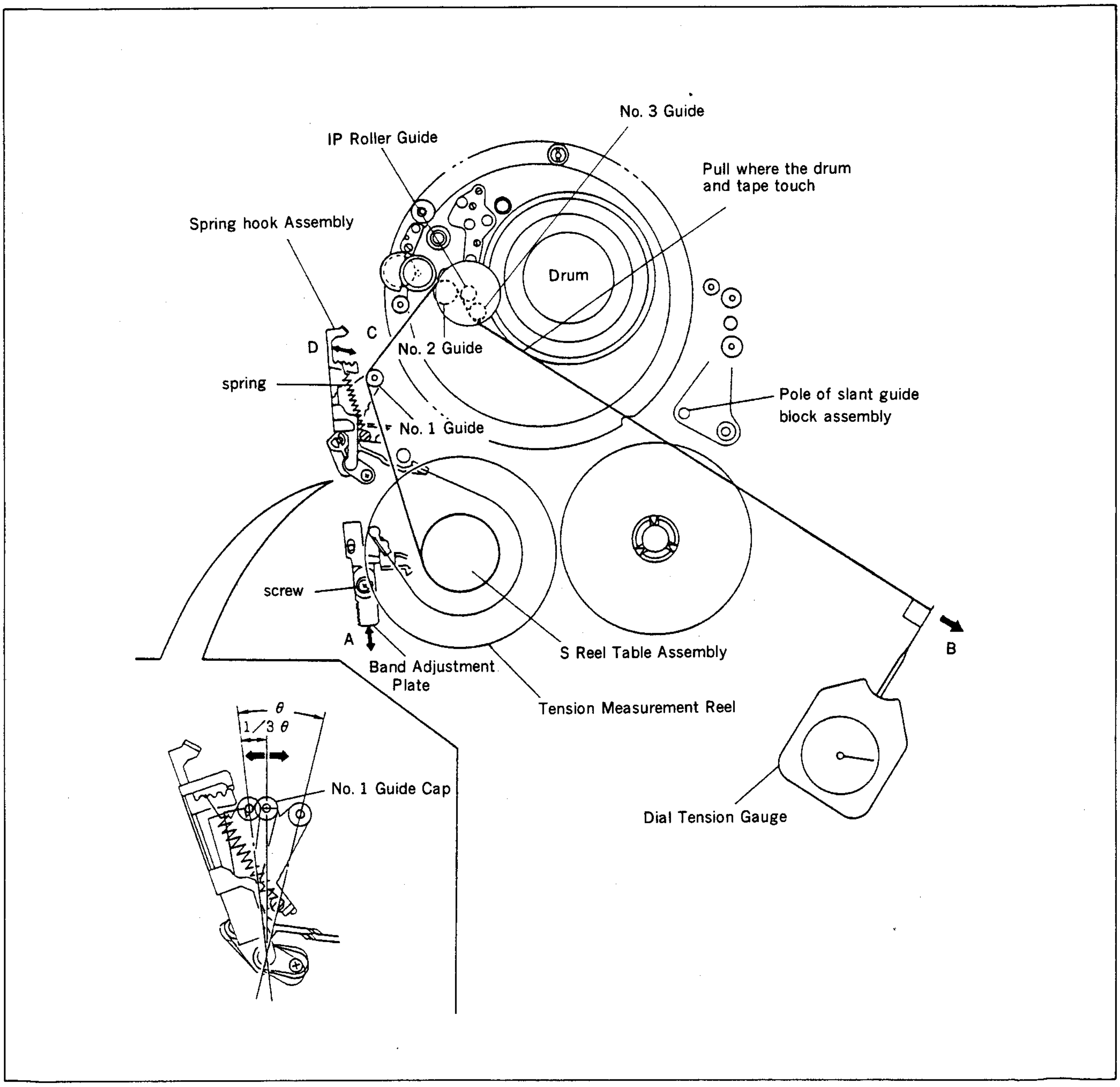
(2) Install the Mechanical Deck with Removal Steps Section 2-2 in reverse order.

(3) Insert the cassette tape in the unit and perform the FWD running for two minutes.

(4) Eject the cassette tape.

(5) Remove the Mechanical Deck from the unit referring to Section 2-2.

(6) Perform the FWD Back Tension Adjustment referring to Section 5-5.


No. 3 Guide
IP Roller Guide
Pull where the drum and tape touch
Spring hook Assembly
Drum
D
C
No. 2 Guide
spring
No. 1 Guide
Pole of slant guide block assembly
screw
A
Band Adjustment Plate
S Reel Table Assembly
B
Tension Measurement Reel
θ
1/3 θ
No. 1 Guide Cap
Dial Tension Gauge

SECTION 6
TAPE PATH ADJUSTMENT

.After check that the Electrical Adjustments (Sections 7 to 10) are completed, perform this adjustment.

Alignment Information

Track Shift Tool

The 8 mm Video System employs a high precision tracking ATF (Auto Track Finding) system which instantaneously controls the tape running speed with four kinds of pilot signals. In this way, the Tracking Adjustment Knob is unnecessary and it is possible to trace with accuracy. On the other hand, the adjustment of the Tape Path System was difficult in the ATF system. It was impossible to adjust perfectly because the ATF system automatically corrected even it small miss-tracking occurs. Then the Track Shift Tool (Ref. No. J-14) is used in the adjustment of Tape Path System. The Track Shift Tool can forcibly release the ATF system and can easily adjust the Tape Path System by setting the tracking amout (track shift) manually.

6-1. CONNECTION OF THE TRACK SHIFT TOOL

Use the connection cords (Ref. No. J-15 and J-16) for connection. Connect the Track Shift Tool and the unit as shown in figure 1.

. RF/SWP connector ...
  to CN004 on the FR-43 Board

. CTL connector ...
  to CN906 on the SE-10(P) Board

(Please refer to operation manual of the Track Shift Tool for details.)

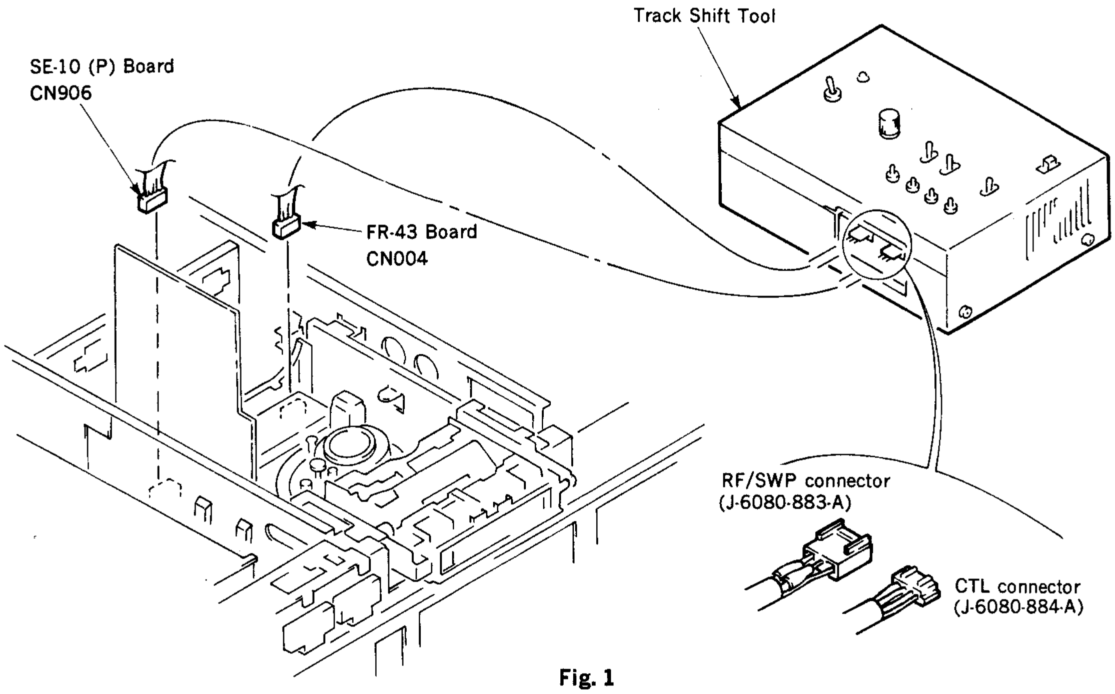
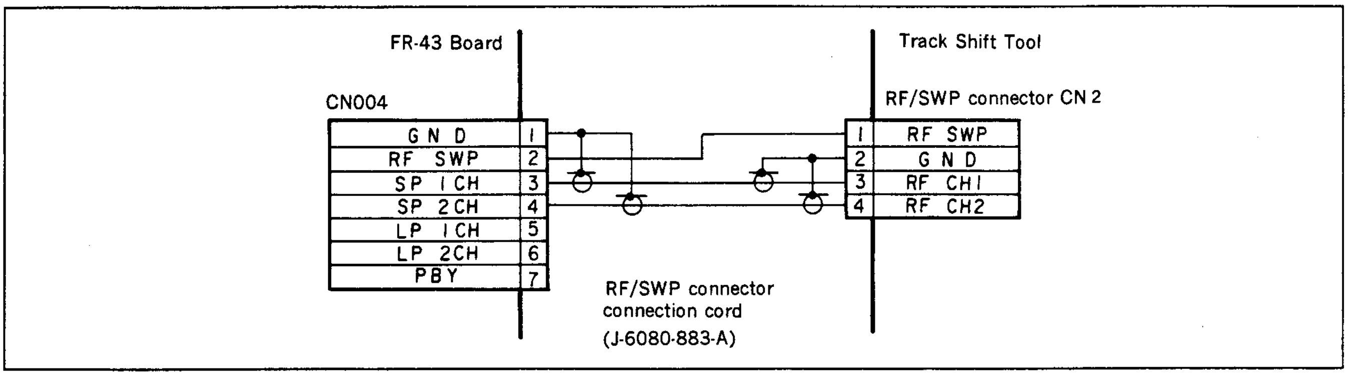


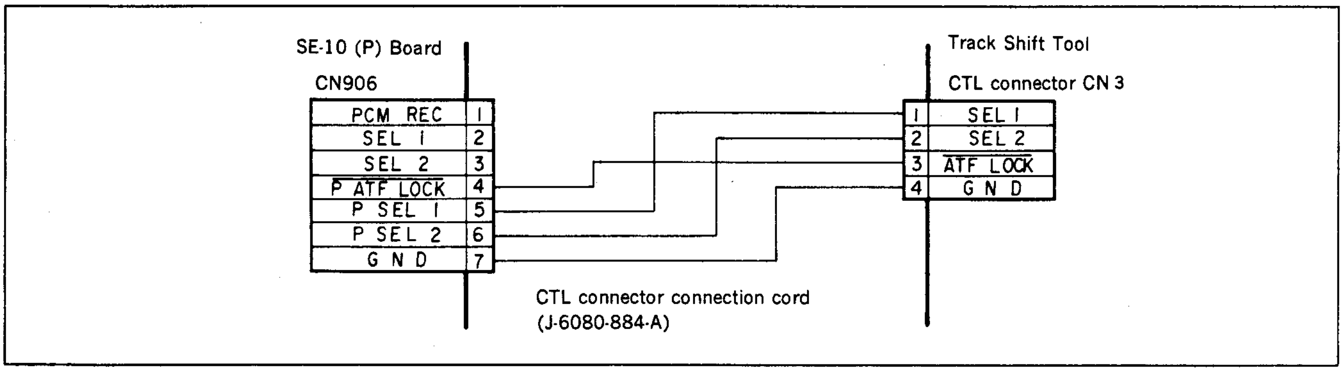
Fig. 1

[Designated Connecting Cord]

. RF/SWP connector connection cord
(Part No. J-6080-883-A)


FR-43 Board
CN004
G N D 1
RF SWP 2
SP 1 CH 3
SP 2 CH 4
LP 1 CH 5
LP 2 CH 6
PBY 7
Track Shift Tool
RF/SWP connector CN 2
1 RF SWP
2 G N D
3 RF CH1
4 RF CH2
RF/SWP connector
connection cord
(J-6080-883-A)

. CTL connector connection cord
(Part No. J-6080-884-A)


SE-10 (P) Board
CN906
PCM REC 1
SEL 1 2
SEL 2 3
P ATF LOCK 4
P SEL 1 5
P SEL 2 6
G N D 7
Track Shift Tool
CTL connector CN 3
1 SEL 1
2 SEL 2
3 ATF LOCK
4 G N D
CTL connector connection cord
(J-6080-884-A)

[Setting of the Switches]

SEL switch

When performing the track shift, set the switch to ON. When setting to OFF, the unit side controls.

PATTERN swich

Set to EV side.

ATF ADJ

Set to OFF side.

When adjusting EVO-9800P, the other switches are not used.

6-2. PREPARATION FOR ADJUSTMENT

Tools: Track Shift Tool (Ref. No. J-14)
RF/SWP connector (Ref. No. J-15)
CTL connector (Ref. No. J-16)
Oscilloscope
Alignment tape for tracking
(WR5-1CP) (Ref. No. J-5)

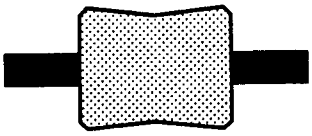
(1) Clean the tape path surface (the individual tape guides, drum, capstan shaft and pinch roller).

(2) Connection of the oscilloscope
1CH: CH2 checking pin of the Track Shift Tool
EXT TRIG:RF SWP checking pin of the Track Shift Tool

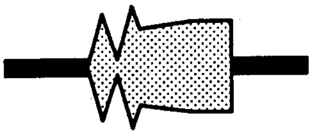
(3) 1. Set the SEL switch of the Track Shift Tool to OFF and play back the alignment tape for tracking (WR5-1CP). Check that the RF waveforms of both entrance and exit sides are flat. (fig. 1ⓐ)

2. Set the SEL switch of the Track Shift to ON and check that the RF waveform of the exit side is as shown in the fig. 1ⓓ.

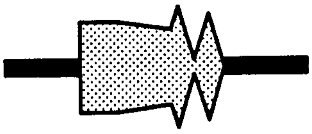
- . In case of the RF waveform at the entrance side is not flat. (fig. 1ⓑ)
  ... Perform Tape Entrance Side Adjustment referring to Section 6-4.
- . In case of the RF wavefrom at the exit side do not meet the steps 1 and 2.
  ... Perform Tape Exit Side Adjustment referring to Section 6-5.



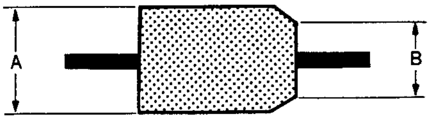
ⓐNormal



ⓑEntrance side is defective.



ⓒExit Side is defective.



$\frac{5}{6}A \geqq B \geqq \frac{3}{4}A$

ⓓ

Fig. 1

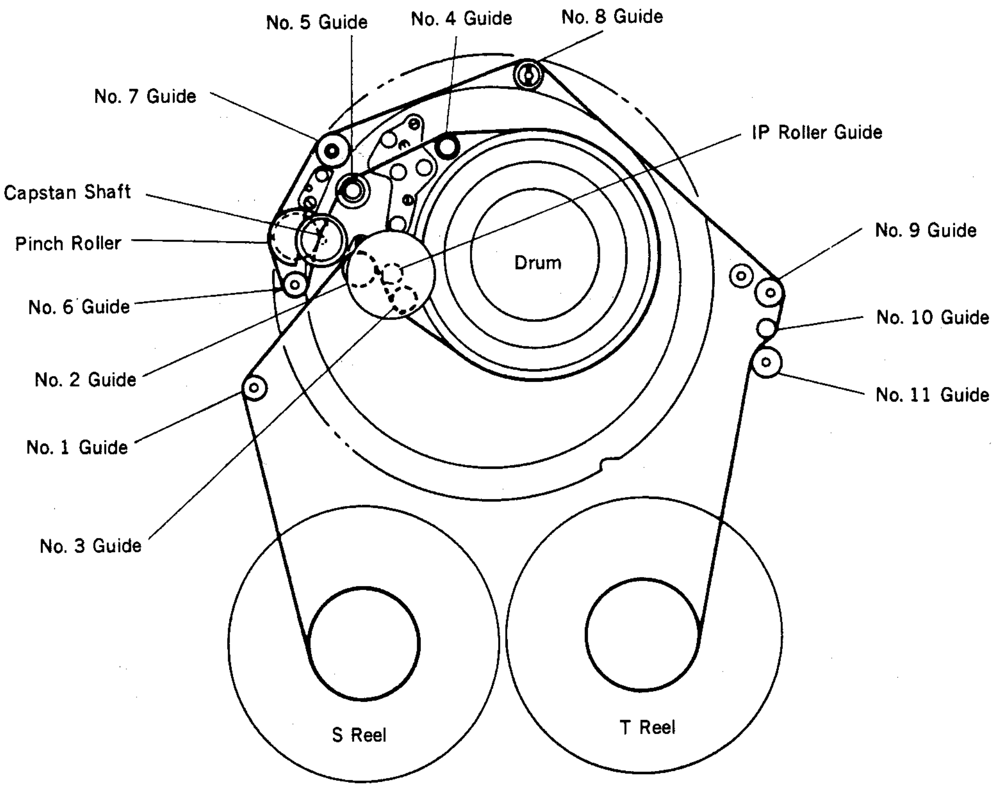
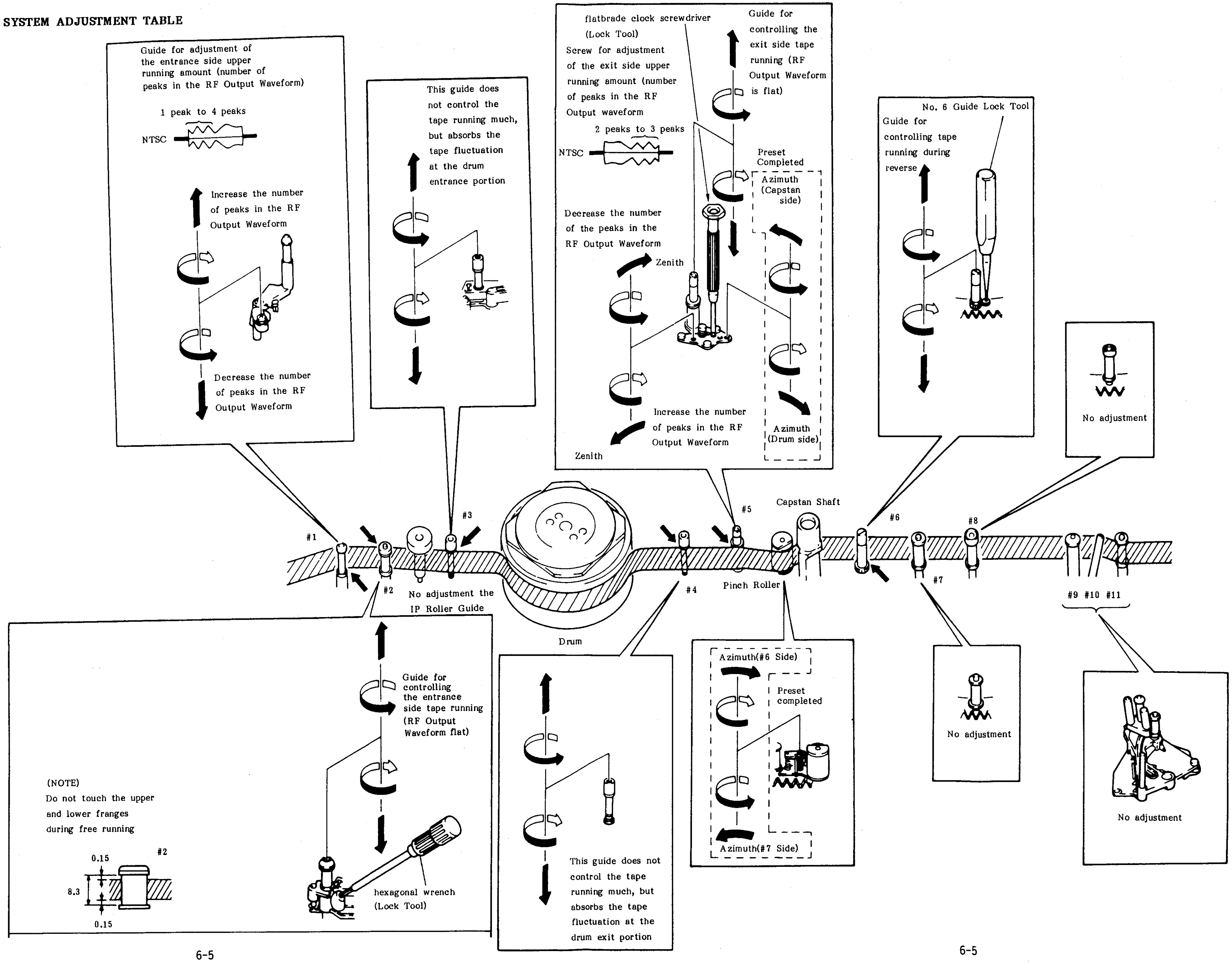

No. 5 Guide
No. 4 Guide
No. 8 Guide
No. 7 Guide
IP Roller Guide
Capstan Shaft
Pinch Roller
Drum
No. 9 Guide
No. 6 Guide
No. 10 Guide
No. 2 Guide
No. 11 Guide
No. 1 Guide
No. 3 Guide
S Reel
T Reel

Fig. 2 Tape Guide Arrangement Diagram

6-3. TAPE PATH SYSTEM ADJUSTMENT TABLE



Guide for adjustment of the entrance side upper running amount (number of peaks in the RF Output Waveform)

1 peak to 4 peaks

Increase the number of peaks in the RF Output Waveform

Decrease the number of peaks in the RF Output Waveform

This guide does not control the tape running much, but absorbs the tape fluctuation at the drum entrance portion

flatbrade clock screwdriver (Lock Tool)

Screw for adjustment of the exit side upper running amount (number of peaks in the RF Output waveform

2 peaks to 3 peaks

Decrease the number of the peaks in the RF Output Waveform

Increase the number of peaks in the RF Output Waveform

Guide for controlling the exit side tape running (RF Output Waveform is flat)

Preset Completed

No. 6 Guide Lock Tool

Guide for controlling tape running during reverse

No adjustment the IP Roller Guide

Guide for controlling the entrance side tape running (RF Output Waveform flat)

hexagonal wrench (Lock Tool)

(NOTE)
Do not touch the upper and lower franges during free running

This guide does not control the tape running much, but absorbs the tape fluctuation at the drum exit portion

Preset completed

No adjustment

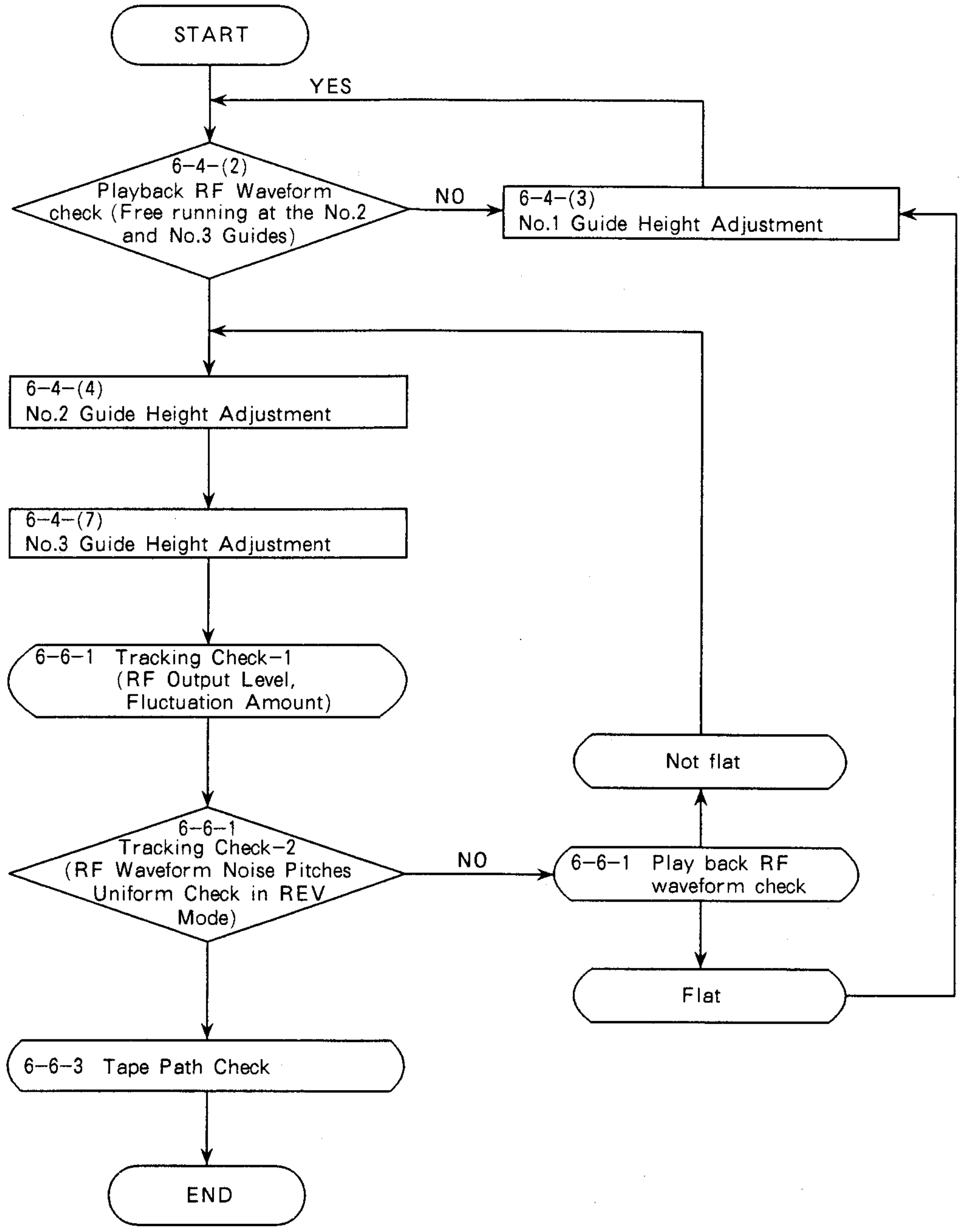
No adjustment

No adjustment

NTSC
NTSC
Zenith
Zenith
Azimuth (Capstan side)
Azimuth (Drum side)
#1
#2
#3
#4
#5
#6
#7
#8
#9 #10 #11
Capstan Shaft
Pinch Roller
Drum
Azimuth(#6 Side)
Azimuth(#7 Side)
#2
0.15
8.3
0.15

6-4. Tape Entrance Side Adjustment

Flow Chart of Adjustment


START
YES
6-4-(2)
Playback RF Waveform check (Free running at the No.2 and No.3 Guides)
NO
6-4-(3)
No.1 Guide Height Adjustment
6-4-(4)
No.2 Guide Height Adjustment
6-4-(7)
No.3 Guide Height Adjustment
6-6-1 Tracking Check-1 (RF Output Level, Fluctuation Amount)
Not flat
6-6-1
Tracking Check-2
(RF Waveform Noise Pitches Uniform Check in REV Mode)
NO
6-6-1 Play back RF waveform check
Flat
6-6-3 Tape Path Check
END

Mode: Play back the alignment tape

Tools: Alignment tape for tracking (WR5-1CP) (Ref. No. J-5)
Oscilloscope
Track Shift Tool (Ref. No. J-14)
RF/SWP connector (Ref. No. J-15)
CTL connector (Ref. No. J-16)
Hexagonal screwdriver (across flat has 0.89 mm) (Ref. No J-17)
Small adjustment mirror (Ref. No. J-4)

Preparation:

(i) Remove the Top Plate referring to Section 2-1.

(ii) Open the MB-19 Board referring to Section 2-5-5.

(iii) Connect the Track Shift Tool and oscilloscope to the unit referring to Sections 6-1 and 6-2.

(iv) Play back the alignment tape.

Procedure:

(1) Remove the Fly Wheel referring to Section 4-1.

(2) Loosen the No. 2 Guide Lock Screw and turn the No. 2 and No. 3 Guides counterclockwise to free the tape path at the entrance side. (fig. 1 and 2)

Note: The space between upper and lower flanges of the No. 2 Guide is narrow. Therefore, check that the tape does not touch the upper and lower flanges. If loosen the No. 2 Guide too much, the tape touches the lower flange and the RF waveform at the entrance side exceeds the original free waveform.

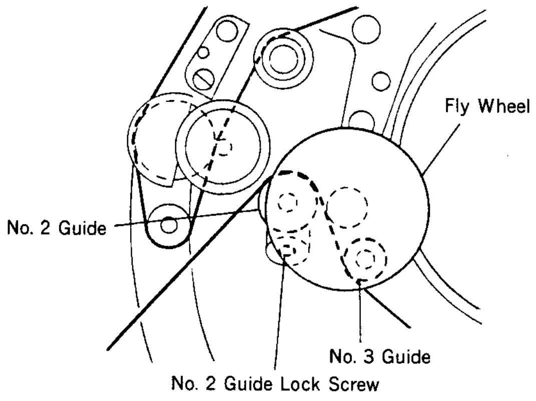

Fly Wheel
No. 2 Guide
No. 3 Guide
No. 2 Guide Lock Screw

Fig. 1

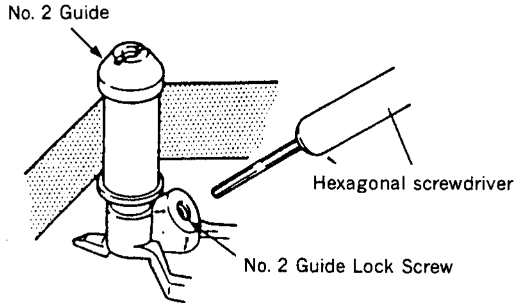

No. 2 Guide
Hexagonal screwdriver
No. 2 Guide Lock Screw

Fig. 2

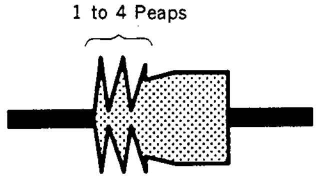


Fig. 3

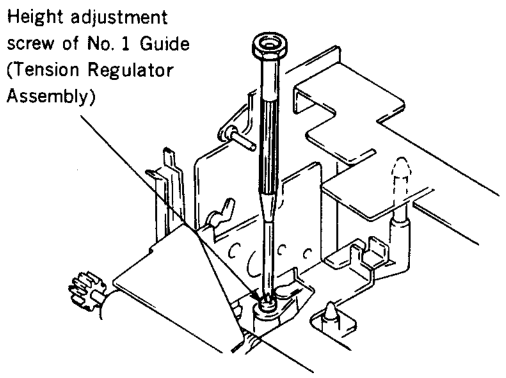

Height adjustment screw of No. 1 Guide (Tension Regulator Assembly)

Fig. 4

(3) Check that the RF waveform at the entrance side has 1 to 4 peaks in this condition. If not, adjust as follows. (fig. 3)

- less than 1 peak

  Turn and adjust the height adjustment screw of the No. 1 Guide (Tension Regulator Arm Assembly) clockwise 90 degrees step. (fig. 4)

- more than 4 peaks

  Turn and adjust the height adjustment screw (Tension Regulator Arm Assembly) counterclockwise 90 degrees step. (fig. 4)

(4) Turn slowly the No. 2 Guide clockwise to flatten the waveform at the entrance side. (fig. 5)

Note: At this time, do not turn the No. 2 Guide too much.

(5) Set the SEL switch of the Track Shift Tool to ON. Turn the Track Shift Knob and set the amplitude of the RF waveform to two-third position. (fig. 6)

(6) Turn the No. 2 Guide and raise the entrance side waveform slightly. (fig. 7)

(7) Flatten the waveform with the No. 3 Guide. (fig. 8)

(8) Tighten the lock screw of the No. 2 Guide. (fig. 2)

(9) After adjustment, perform Check After Adjustment referring to Section 6-6.

(10) Smear locking compound to the No. 1 Guide Height Adjustment Screw and adjustment nut of the No. 3 Guide.

(11) Install the Fly Wheel referring to Section 4-1.

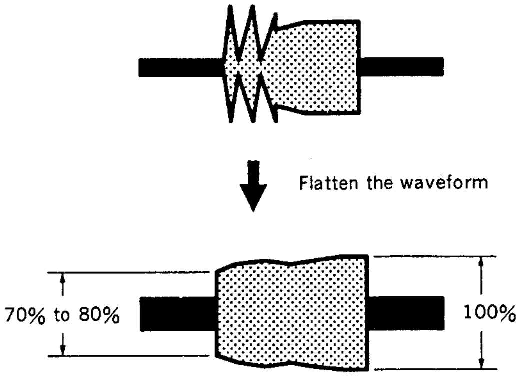


Fig. 5

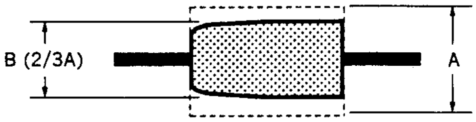
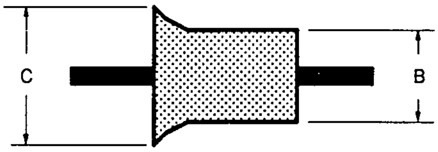


Fig. 6



C=1.15B to 1.25B

Fig. 7

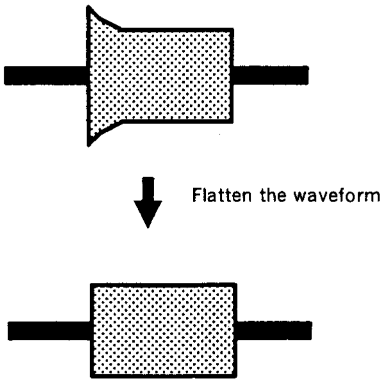
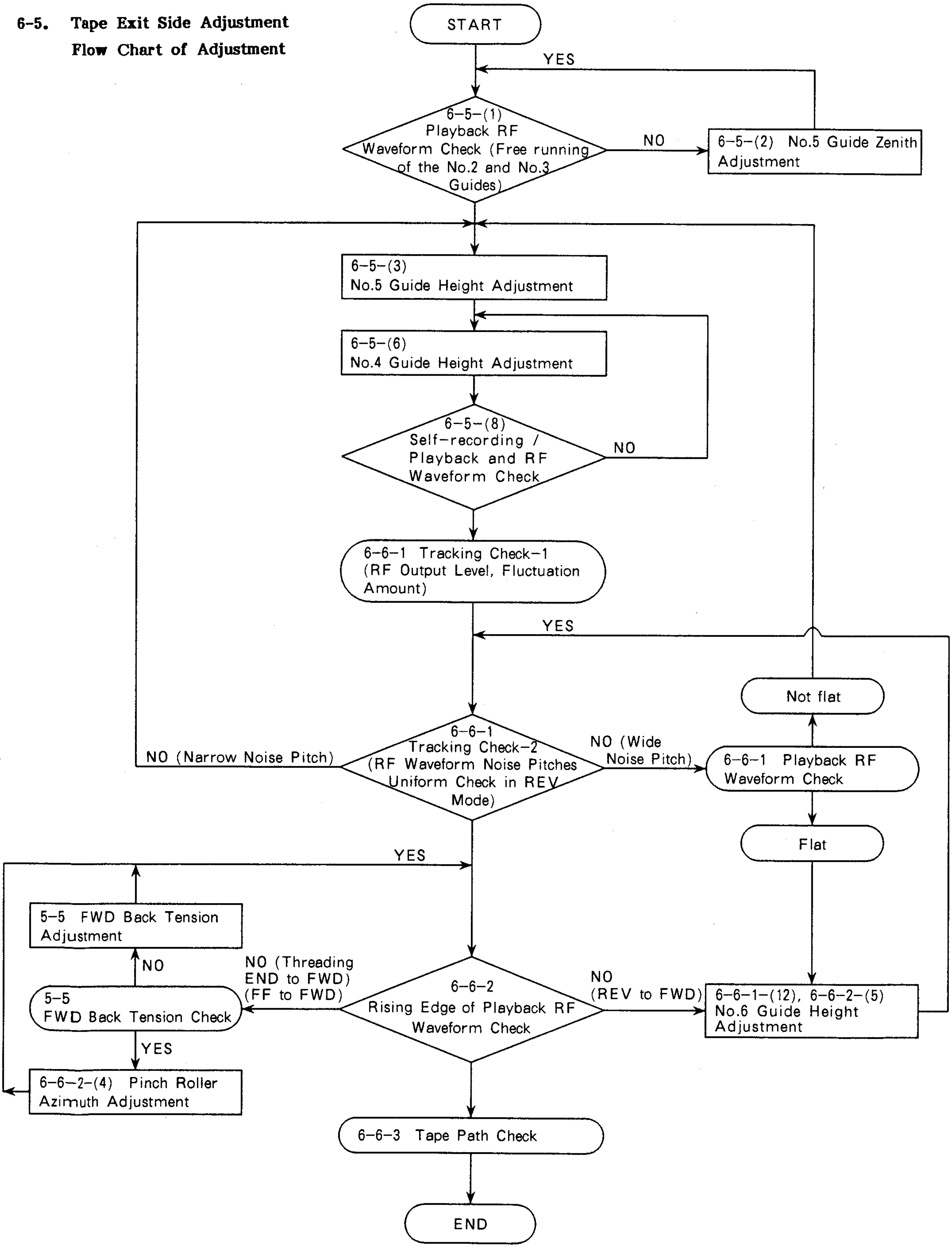


Fig. 8

6-5. Tape Exit Side Adjustment

Flow Chart of Adjustment



START
YES
6-5-(1) Playback RF Waveform Check (Free running of the No.2 and No.3 Guides)
NO
6-5-(2) No.5 Guide Zenith Adjustment
6-5-(3) No.5 Guide Height Adjustment
6-5-(6) No.4 Guide Height Adjustment
6-5-(8) Self-recording / Playback and RF Waveform Check
NO
6-6-1 Tracking Check-1 (RF Output Level, Fluctuation Amount)
YES
Not flat
NO (Narrow Noise Pitch)
6-6-1 Tracking Check-2 (RF Waveform Noise Pitches Uniform Check in REV Mode)
NO (Wide Noise Pitch)
6-6-1 Playback RF Waveform Check
Flat
YES
5-5 FWD Back Tension Adjustment
NO
NO (Threading END to FWD) (FF to FWD)
5-5 FWD Back Tension Check
6-6-2 Rising Edge of Playback RF Waveform Check
NO (REV to FWD)
6-6-1-(12), 6-6-2-(5) No.6 Guide Height Adjustment
YES
6-6-2-(4) Pinch Roller Azimuth Adjustment
6-6-3 Tape Path Check
END

Mode: Play back the alignment tape

Tools: Alignment tape for tracking (WR5-1CP) (Ref. No. J-5)
Oscilloscope
Track Shift Tool (Ref. No. J-14)
RF/SWP connector (Ref. No. J-15)
CTL connector (Ref. No. J-16)
Hexagonal screwdreiver (across flat has 0.89 mm) (Ref. No. J-17)
Small adjustment mirror (Ref. No. J-4)
Cassette tape E5-90 (Hi8 ME tape)

Preparation:

(i) Remove the Top Panel referring to Section 2-1.

(ii) Open the MB-19 Board referring to Section 2-5-5.

(iii) Connect the Track Shift Tool and oscilloscope to the unit referring to Section 6-1 and 6-2.

(iv) Play back the alignment tape.

Procedure:

(1) Turn the No. 4 and No. 5 Guides counterclockwise to free the tape path at the exit side. (fig. 1)

Note: If the No. 5 Guide nut is not loosen because of locking compound, dissolve locking compound with alcohol. Check that the tape does not touch the lower flange of the No. 5 Guide in free running.

(2) Check that the RF waveform at the exit side has 2 to 3 peaks in this condition. If not, adjust as follows. (fig. 2)

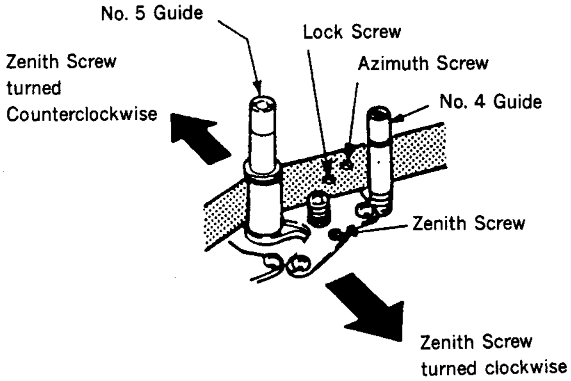

No. 5 Guide
Lock Screw
Zenith Screw turned Counterclockwise
Azimuth Screw
No. 4 Guide
Zenith Screw
Zenith Screw turned clockwise

Fig. 1

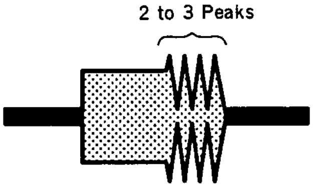


Fig. 2

1. Turn and loosen the lock screw counterclockwise.

less than 2 peaks

2. Turn and adjust slowly the zenith screw clockwise 45 degrees step.

more than 3 peaks

3. Turn and adjust slowly the zenith screw of the No. 5 Guide counterclockwise 45 degrees step.
4. Tighten the lock screw clockwise. (fig. 1)

Note: If tighten the lock screw too much, the waveform will change. Tighten suitably the lock screw. Never turn the azimuth screw of the No. 5 Guide.

(3) Turn the No. 5 Guide clockwise and flatten the RF waveform at the exit side. (fig. 3)

Note: At this time, the waveform reaction is slow against the nut rotation. After check that the waveform variation is stabilized, turn the nut more.

(4) Set the SEL switch of the Track Shift Tool to ON. Turn the Track Shift Knob and set the amplitude of the RF waveform to two-third position. (fig. 4)

(5) Turn the No. 5 Guide and raise the exit side waveform slightly. (fig. 5)

(6) Turn the No. 4 Guide and flatten the waveform. Then turn the No.4 Guide a little more as shown in the fig.6.

(7) Eject the alignment tape.

(8) Perform self-recording/playback with a cassette tape (E5-90) and check the RF waveform.

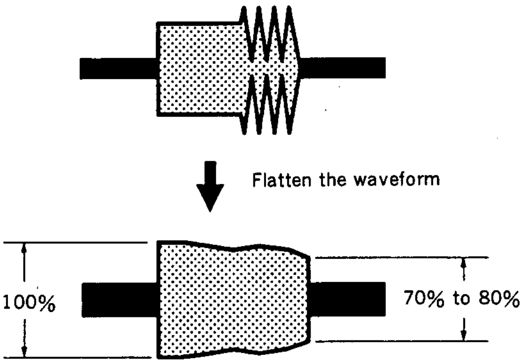


Fig. 3

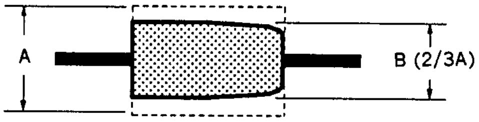
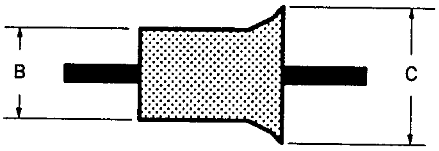


Fig. 4



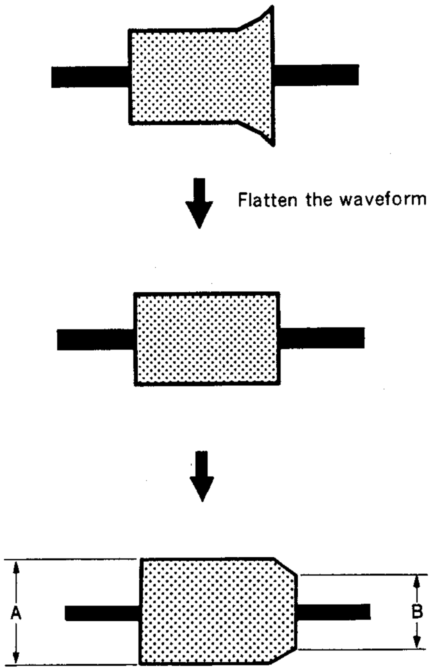
C=1.15B to 1.25B

Fig. 5

1. Perform Hi8 Recording with no signal. (Use the cassette tape from tape top to middle.) Check the SP and Hi8 of the indicator section on the front panel are lighting in this mode.
2. Play back the cassette tape, check that the RF waveform (CH 1 and CH 2) at the exit side meet the specification as shown in the fig.7. If not, adjust the height of No.4 Guide again within the specification as shown in the fig.6. Perform the steps 1 and 2 and check that it meet the specification as shown in the fig.7.

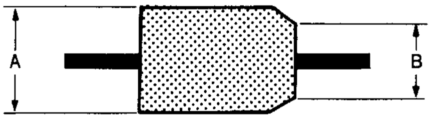
(9) After adjustment, perform the Check After Adjustment referring to Section 6-6.

(10) Smear locking compound to the lock screw, zenith screw and adjustment nuts of No.4 Guide and No.5 Guide.



$$\frac{5}{6}A \geqq B \geqq \frac{3}{4}A$$

Fig. 6



$$B \geqq \frac{3}{4}A$$

Fig. 7

6-6. CHECK AFTER ADJUSTMENT

Tool: No. 6 Guide Lock Tool (Ref. No. J-10)
Alignment tape for tracking (WR5-1CP) (Ref. No. J-5)

1. Video Tracking Check

(1) Play back the alignment tape for tracking.

(2) Set the SEL switch of the Track Shift Tool to ON. Turn the Track Shift Knob and set the amplitude of the RF waveform to two-third position. (fig. 1)

(3) In this time, check that the amplitude minimum value (E MIN) of the RF waveform is more than 75% of maximum value (E MAX). (fig. 2)

(4) In this time, check that the fluctuation amount of the RF waveform at entrance and exit sides meet the required specification as shown in figure. 3.

(5) Set the SEL switch of the Track Shift Tool to OFF.

(6) Set to the REV mode and check that the noise pitches of the waveform are uniform. (fig. 4) If not, adjust as follows.

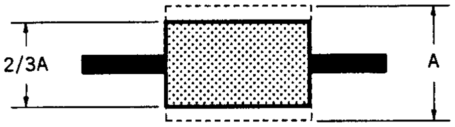


Fig. 1

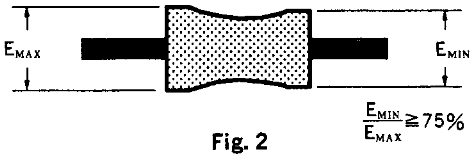

E_{MAX}
E_{MIN}
$\frac{E_{MIN}}{E_{MAX}} \geqq 75\%$

Fig. 2

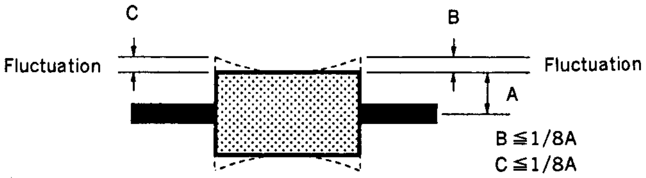

C
B
Fluctuation
Fluctuation
A
B ≦ 1/8A
C ≦ 1/8A

Fig. 3

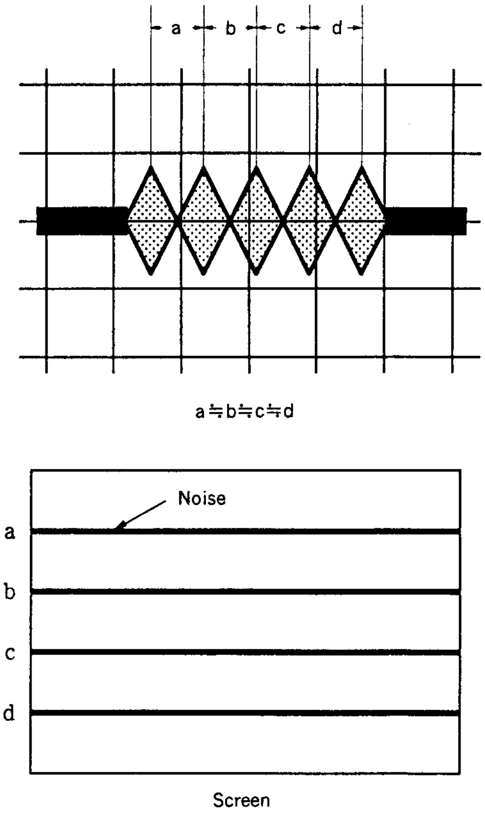

a
b
c
d
a≒b≒c≒d
Noise
a
b
c
d
Screen

Fig. 4

When the noise pitch is narrow at the entrance side (upper of screen). (fig. 5)

(7) Check that the RF waveform is flat in the PLAY mode.

(8) Perform the height adjustment of the No. 1 Guide referring to Section 6-4.

Note: After adjustment, perform the Tracking Check referring to Section 6-6-1.

When the RF waveform is not flat.

(9) Perform the height adjustment of the No. 2 and No. 3 Guides referring to Section 6-4.

Note: After adjustment, perform the Tracking Check referring to Section 6-6-1.

When the noise pitch is narrow at the exit side (lower of screen). (fig. 6)

(10) Set to PLAY mode and perform the height adjustment of the No. 4 and No. 5 Guides referring to Section 6-5. After adjustment, perform the Tracking Check referring to Section 6-6-1 and check that it meet the required specification.

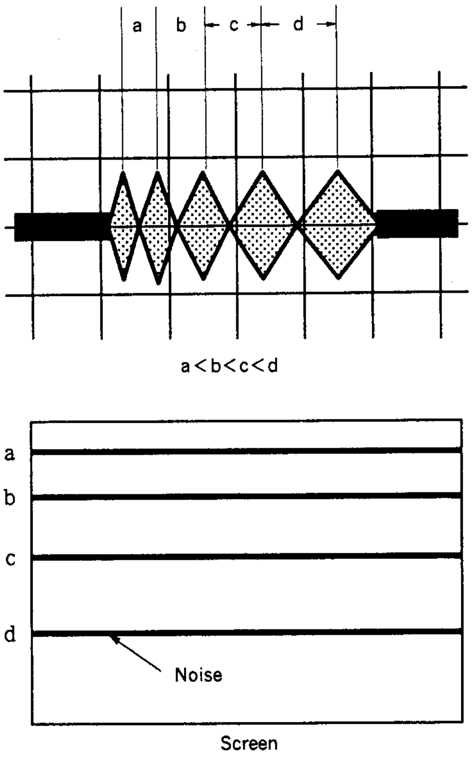


Fig. 5

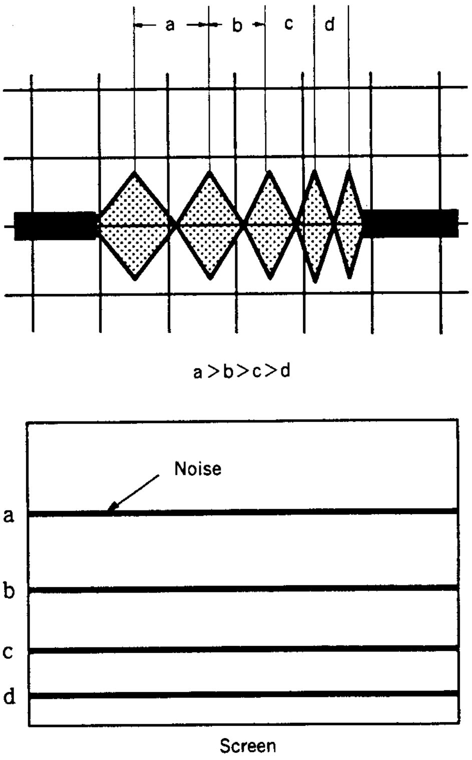


Fig. 6

When the noise pitch is wide at the exit side (lower of screen). (fig. 7)

(11) Set to PLAY mode and check that the RF waveform is flat.

(12) Turn and loosen the Guide Lower Gear counterclockwise with the No. 6 guide lock tool. (fig. 8)

(13) Turn the No. 6 Guide and perform the height adjustment.

Note: At this time, if the No. 6 Guide is raised too much, the wrinkles may occur between the capstan shaft and No. 5 Guide (A portion). Check that the wrinkes are not occur. (fig. 9)

(14) Turn and *lock the Guide Lower Gear clockwise with the NO. 6 guide lock tool.

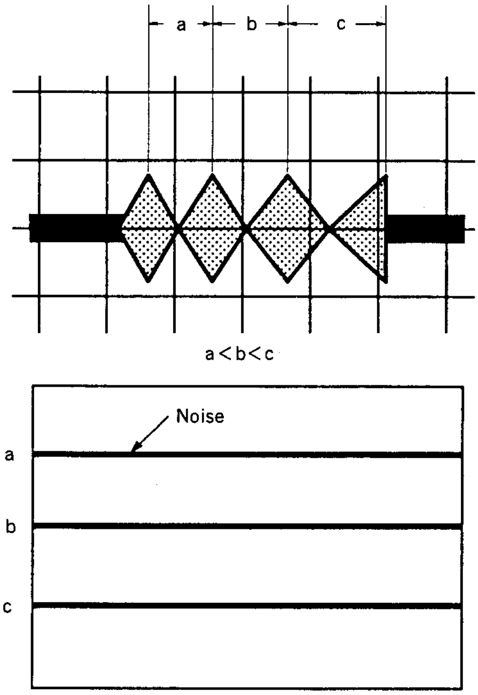
*Touch the Guide Lower Gear against the lower flange of the No. 6 Guide and turn it more about 10 degrees.

Note: After adjustment, perform the Tracking Check referring to Section 6-6-1.

When the waveform is not flat.

(15) Perform the height adjustment of the No. 4 and No. 5 Guides referring to Section 6-5.

Note: After adjustment, perform the Tracking Check referring to Section 6-6-1.



Screen

Fig. 7

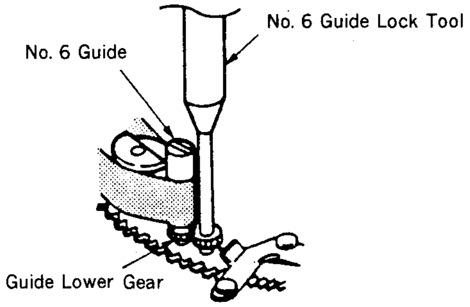


Fig. 8

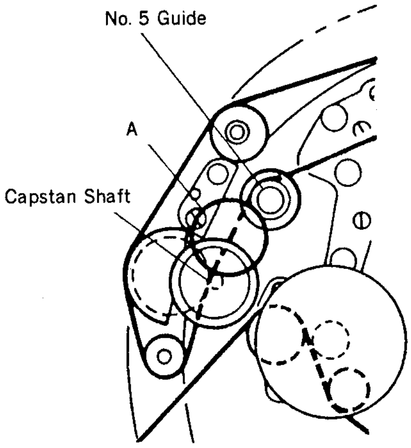


Fig. 9

2. Rising Edge of Waveform Check

(1) Check that the RF waveform rises horizontally (flat waveform) in playback after threading is completed, playback after CUE/REV or FF mode. If the RF waveform do not rise horizontally, adjust as follows.

After threading is completed, when the noise occurs at the playback rising edge at the exit sede. (lower of screen) (fig. 11).

(2) Check the FWD Back Tension.

When the FWD Back Tension is too low.

(3) Adjust again FWD Back Tension Adjustment referring to Section 5-5.

When the FWD Back Tension is normal.

(4) while adjusting the playback rising edge, turn the azimuth screw of the Pinch Roller clockwise about 5 degrees step. (fig.12)

After REV mode, when the noise occurs at the playback rising edge at the exit side. (lower screen)(fig. 11)

(5) Turn and loosen the Guide Lower Gear counterclockwise with No. 6 Guide Lock Tool. (fig. 8)

(6) Turn the No. 6 Guide and perform the height adjustment.

Note: At this time, if the No. 6 Guide is raised too much, the wrinkles may occur between the capstan shaft and No. 5 Guide (A portion). Check that the wrinkes are not occur. (fig. 9)

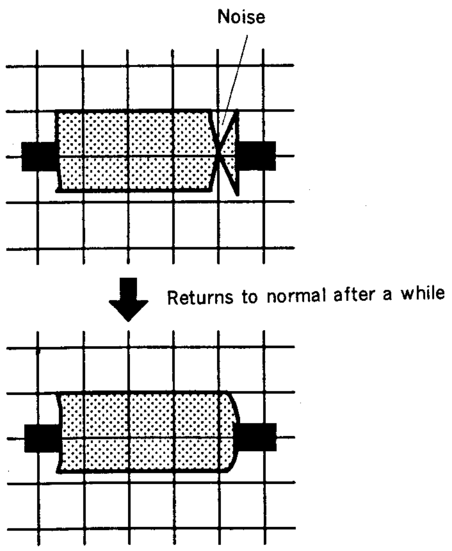


Fig. 11

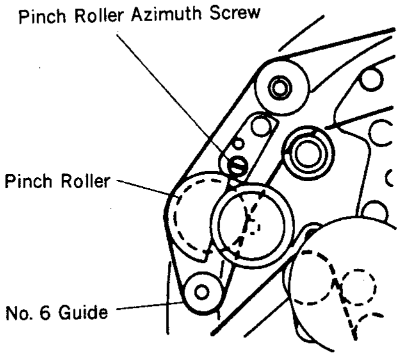


Fig. 12

After FF mode, when the noise occres at the playback rising edge at the exit side. (lower of screen)(fig. 11)

(7) Check that the FWD Back Tension.

When the FWD Back Tension is too low.

(8) Adjust again FWD Back Tension Adjustment referring to Section 5-5

When the FWD Back Tension is normal.

(9) While adjusting the playback rising edge, turn the azimuth screw of the Pinch Roller clockwise about 5 degrees step. (fig. 12)

Note: **After adjustment, be sure to check the playback rising edge after threading is completed.**

3. Tape Running Check

Check the tape running at the flange of the Guides (shown by arrows) in PLAY and REV modes.

No.1, No.2, No.3. No.5 Guides:

... Tape runs in contact with upper or lower flange. Less than 0.3 mm tape curl is acceptacle.

No.6 Guide:

... Tape runs in cantact with lower flange without curl.

No.4 Guide:

... Tape runs in contact with upper flange. Less than 0.5 mm tape curl is acceptacle.

NOTE: After checking, smear locking compound these points.

. No.1 Guide height adjustment screw
. No.5 Guide lock screw and zinith screw
. adjustment nut of No.3 Guide
. adjustment nut of No.4 Guide
. adjustment nut of No.5 Guide

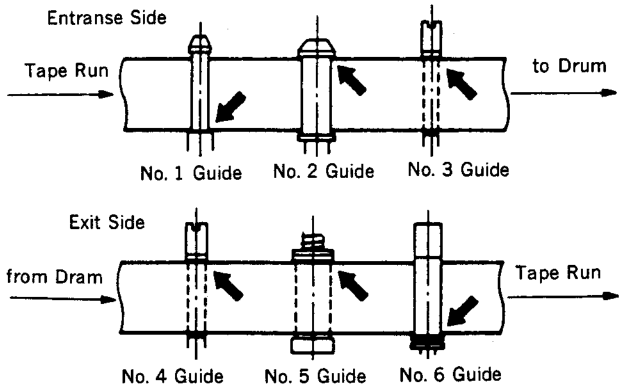


Fig. 13

SECTION 7
POWER SUPPLY AND SYSTEM CONTROL ALIGNMENT

[Equipment Required]
- Digital voltmeter

7-1. +5V ADJUSTMENT

Machine condition for adjustment	Specifications	Adjustments
• E-E mode	TP3/DC-45A (C-1) 5.14±0.05V	⊘RV1/DC-45A (F-1)

7-2. RF DET LEVEL ADJUSTMENT

Machine condition for adjustment	Specifications	Adjustments
• E-E mode	TP4/DI-12 (L-3) Value of this time is A	
	TP3/DI-12 (L-3) A=0.1±0.01Vdc	⊘RV403/DI-12 (L-3)

SECTION 8
SERVO SYSTEM ALIGNMENT

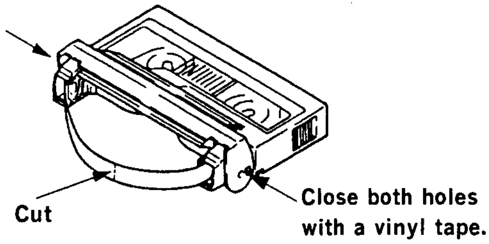
[Equipment Required]

- Oscilloscope
- Frequency counter
- Digital voltmeter
- Alignment tape

Name (Part No.)	REC mode	Tape Type	Tape Speed	Contents	
				Video Area	PCM Area
Switching position WR2-3CS (8-967-992-17)	STD	MP	SP	CH-1 : 3MHz CH-2 : 3MHz Marker Width : 100±10μsec.	
SP operation check WR5-8CSE (8-967-995-48)	Hi8	ME	SP	VIDEO SIGNAL Color-bar 4 min. Monoscope 4 min. AUDIO SIGNAL (AFM) 400 Hz 60% mod.	AUDIO SIGNAL (PCM) 400 Hz 20 min.
LP operation check WR5-8CLE (8-967-995-57)	Hi8	ME	LP	VIDEO SIGNAL Color-bar 4 min. Monoscope 4 min. AUDIO SIGNAL (AFM) 400 Hz 60% mod.	AUDIO SIGNAL (PCM) 400 Hz 40 min.

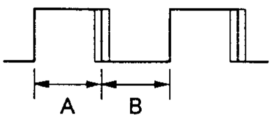
- Empty cassette (See below.)

1. Draw out a tape and cut it.
2. Cover two holes on both side of the cassette with a vinyl tape.



8-1. CAPSTAN FG DUTY ADJUSTMENT

Remove the Bottom Plate and open the HK-5 Board for this adjustment. If it does not meet the specification, remove the mechanical deck and adjust again.

Machine condition for adjustment	Specifications	Adjustments
• Connect each TP001 AND TP002 on the SE-10P board to ground with jumper wires. • Insert the empty cassette tape and put the machine into the play back mode. • After adjustment, remove the jumper wires.	TP105/SE-10P (D-4)  A≒B	⊘RV801/MD-23P (D-3)

8-2. REEL FG ADJUSTMENT

Remove the mechanical deck for this adjustment.

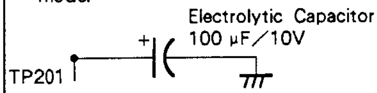
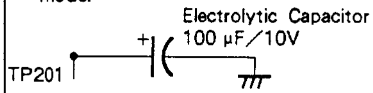
Connect only CN907 on the SE-10P Board.

Machine condition for adjustment	Specifications	Adjustments
• Play back the alignment tape WR5-8CLE.	TP901/MD-23P (G-1) 21±1Hz	⊘RV901/MD-23P (G-1)
• Perform confirmation while playing back the alignment tape WR5-8CLE.	TP902/MD-23P (E-1) 1.0 through 1.4Vdc	
• Perform confirmation while playing back the alignment tape WR5-8CLE with CUE (×9) mode. CUE (×9) : While pressing the PB button, press the FF button on the MB-19 Board. • After adjustment, install the mechanical deck.	TP901/MD-23P (G-1) 37 through 50 Hz TP902/MD-23P (E-1) 1.4 through 1.9Vdc	

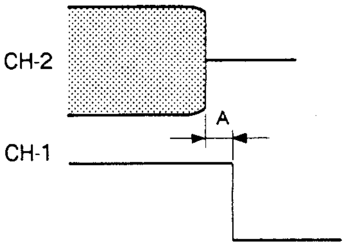
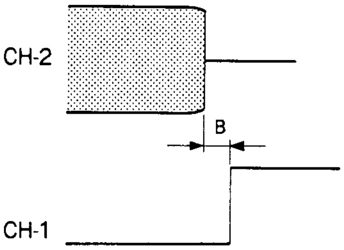
8-3. DRUM FREE SPEED ADJUSTMENT

Machine condition for adjustment	Specifications	Adjustments
• VIDEO IN: No signal • Use the Hi8 ME tape. • REC mode	TP101/SE-10P (D-6) 1.9±0.1Vdc	⊘RV102/SE-10P (E-6)

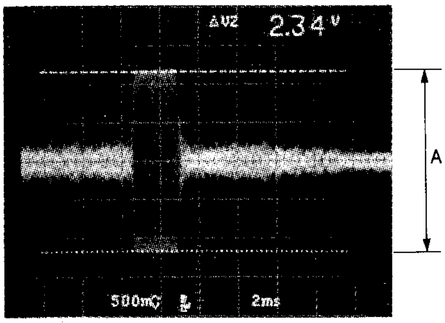
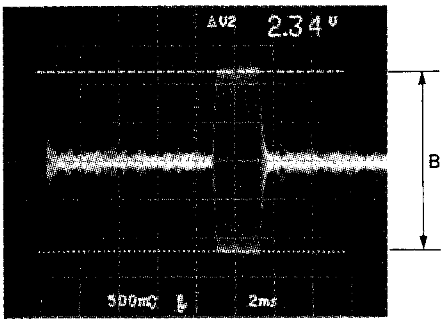
8-4. CAPSTAN FREE SPEED ADJUSTMENT

Machine condition for adjustment	Specifications	Adjustments
Step 1 • Connect TP201/SE-10P (H-3) to ground with electrolytic capacitor (100 μF/10V) during STOP mode.  • Connect TP002/SE-10P (D-6) to ground with jumper wire during STOP mode. • Play back the alignment tape WR5-8CSE. • After adjustment, remove the jumper wire and capacitor.	TP105/SE-10P (D-4) 1341±1 Hz	⊘ RV106/SE-10P (D-5)
Step 2 • Connect TP201/SE-10P (H-3) to ground with electrolytic capacitor (100 μF/10V) during STOP mode.  • Connect TP002/SE-10P (D-6) to ground with jumper wire during STOP mode. • Connect pin 4 of CN901/SE-10P (A-5) to ground with jumper wire during STOP mode. • Play back the alignment tape WR5-8CSE. • After adjustment, remove the jumper wire and capacitor.	TP105/SE-10P (D-4) 670±1 Hz	⊘ RV105/SE-10P (D-5)

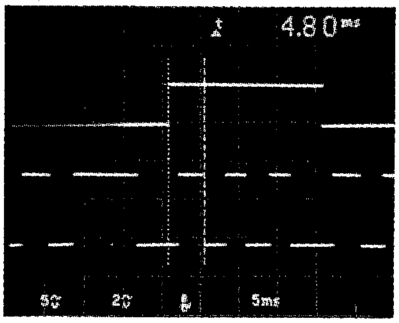
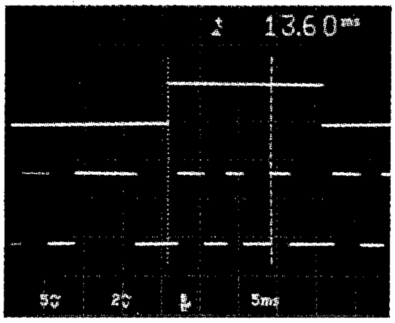
8-5. SWITCHING POSITION ADJUSTMENT

Machine condition for adjustment	Specifications	Adjustments
• Play back the alignment tape WR2-3CS.	CH-1 : TP061/FR-43 (B-2) CH-2 : CN004-4/FR-43 (A-2)  $A=0\pm10\,\mu\text{sec}$	⊘ RV101/SE-10P (C-6) Trigger: TP061/FR-43 (B-2)
	CH-1 : TP061/FR-43 (B-2) CH-2 : CN004-3/FR-43 (A-2)  $B=0\pm10\,\mu\text{sec}$	Trigger: TP061/FR-43 (B-2)

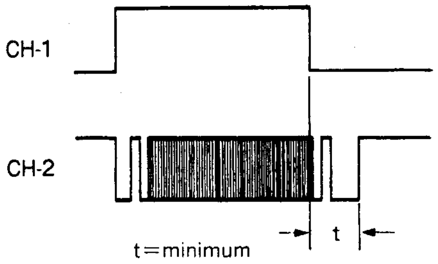
8-6. ATF BPF BALANCE ADJUSTMENT

Machine condition for adjustment	Specifications	Adjustments
• Connect TP208/SE-10P (H-3) to ground with jumper wire. • VIDEO IN : color-bar signal • Preform the self-recording /play back with a Hi8 ME tape. • After adjustment, remove the jumper wire.	IC201-12/SE-10P (G-4) 47kHz  IC201-11/SE-10P (G-4) 16kHz  A=B	⊘ RV201/SE-10P (G-4) Trigger: TP103/SE-10P (F-3)

8-7. STILL ADJUSTMENT

Machine condition for adjustment	**Specifications**	**Adjustments**
• VIDEO IN: color-bar signal • Perform the self-recording/play back with a Hi8 ME tape. • JOG mode • Turn the Search Dial in the FWD direction and narrow the pulse width of A.	CH-1: TP103/SE-10P (F-3) CH-2: TP204/SE-10P (F-5)  4.8±0.1msec	⊘RV203/SE-10P (H-3) Trigger: TP103/SE-10P (F-3)
	CH-1: TP103/SE-10P (F-3) CH-2: TP204/SE-10P (F-5)  13.6±0.1msec	⊘RV204/SE-10P (H-3) Trigger: TP103/SE-10P (F-3)

8-8. SP SLOW ADJUSTMENT

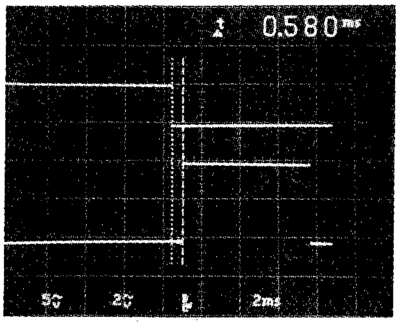
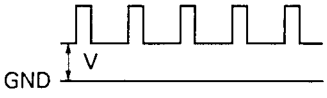
Machine condition for adjustment	Specifications	Adjustments
• VIDEO IN: color-bar signal • Using P5-MP series tape, perform the short recording of the color-bar signal at the end of tape. • Connect TP001/SE-10P (C-2) to ground with jumper wire. • Connect the counter to TP1/DI-12 (L-4). • Put the unit into the SHUTTLE mode and turn the Search Dial in the FWD direction so that the frequency is about 192 Hz. Play back the recorded portion. (It corresponds to one-fifth time speed.) • After adjustment, remove the jumper wire.	CH-1 : TP103/SE-10P (F-3) CH-2 : TP105/SE-10P (D-4)  When the noise appears on the monitor screen, adjust RV104 so that the noise at the bottom of the screen disappears.	⊘ RV304/SE-10P (E-2) ⊘ RV104/SE-10P (D-5) Trigger: TP302/SE-10P (F-3)

8-9. LP SLOW ADJUSTMENT

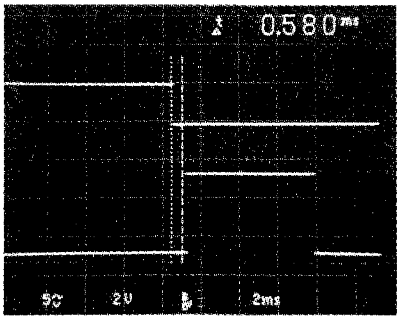
Note: This adjustment should be performed after completion of "8-8. SP SLOW ADJUSTMENT".

Machine condition for adjustment	Specifications	Adjustments
• Connect pin 4 of CN901/SE-10P (A-5) to ground with jumper wire. • VIDEO IN: color-bar signal • Perform the a short recording of the color-bar signal at the end of P5-MP series tape. • Connect TP001/SE-10P (C-2) to ground with jumper wire. • Connect the counter to TP1/DI-12 (L-4). • Put the unit into the SHUTTLE mode and turn the Search Dial in the FWD direction so that the frequency is about 192 Hz. Play back the recorded portion. (It corresponds to one-fifth time speed.) • After adjustment, remove jumper wires.	When the noise appears on the monitor screen, adjust RV103 so that the noise at the bottom of the screen disappears.	⊘ RV103/SE-10P (E-5)

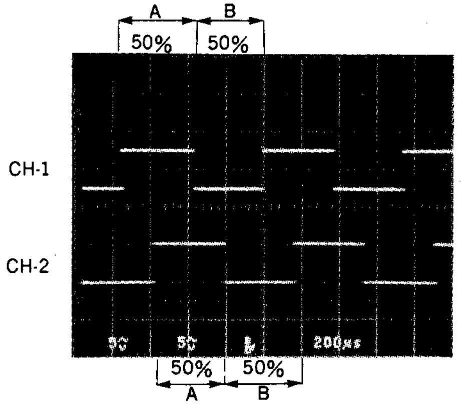
8-10. SP SLOW fH ADJUSTMENT

Machine condition for adjustment	Specifications	Adjustments
Step 1 • Perform the short recording of the color-bar signal with a Hi8 ME tape. • Connect the counter to TP1/DI-12 (L-4). • Put the unit into the SHUTTLE mode and turn the Search Dial in the FWD direction so that the frequency is about 32 Hz. Play back the recorded portion. (It corresponds to one-thirtieth time speed.)	CH-1 : TP103/SE-10P (F-3) CH-2 : TP102/SE-10P (D-5)  580±10μsec	⊘ RV301/SE-10P (F-1)
Step 2 • Perform the short recording of the color-bar signal with a Hi8 ME tape. • Connect the counter to TP1/DI-12 (L-4). • Put the unit into the SHUTTLE mode and turn the Search Dial in the FWD direction so that the frequency is about 192 Hz. Play back the recorded portion. (It corresponds to one-fifth time speed.)	TP301/SE-10P (E-2)  V=1.5±0.1Vdc	⊘ RV303/SE-10P (E-1)

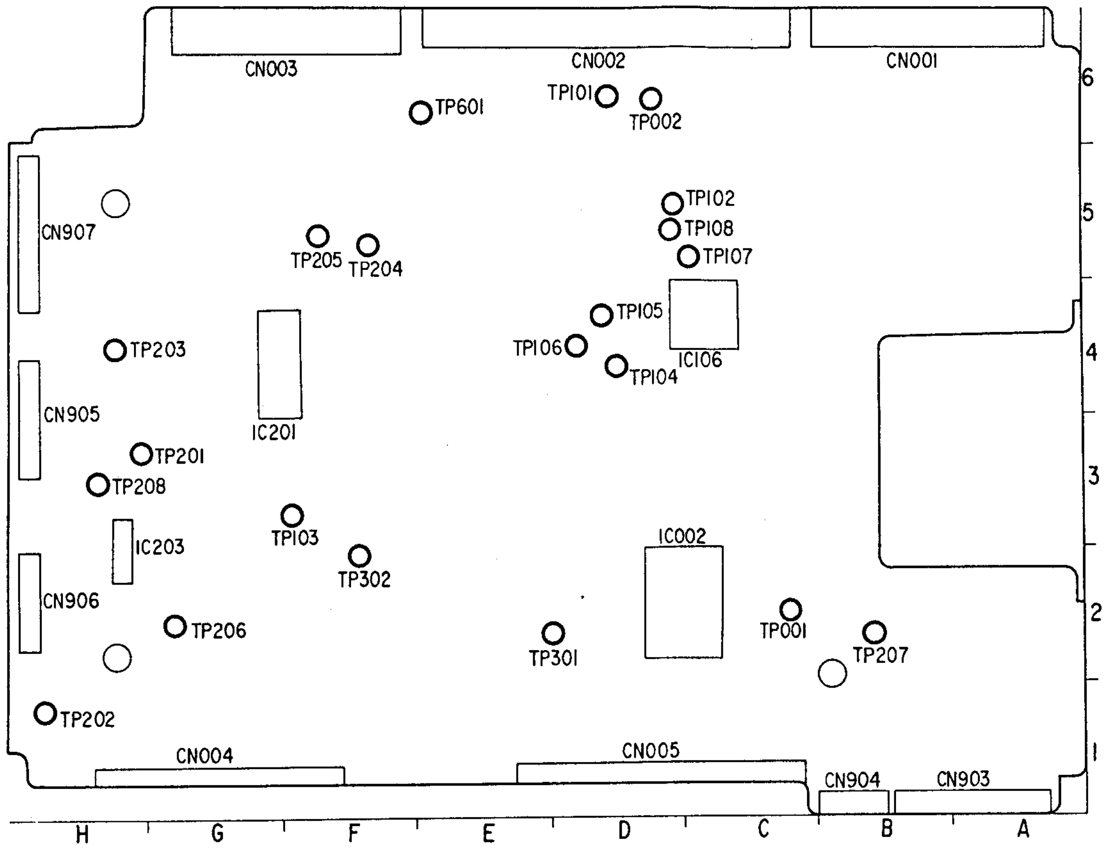
8-11. LP SLOW fH ADJUSTMENT

Machine condition for adjustment	Specifications	Adjustments
• Connect pin 4 of CN901/SE-10P (A-5) to GND with jumper wire. • Perform the short recording of the color-bar signal with a Hi8 ME tape. • Connect the counter to TP1/DI-12 (L-4). • Put the unit into the SHUTTLE mode and turn the Search Dial in the FWD direction so that the frequency is about 192 Hz. Play back the recorded portion. (It corresponds to one-fifth time speed.)	CH-1 : TP103/SE-10P (F-3) CH-2 : TP102/SE-10P (D-5)  580±10μsec	⊘ RV302/SE-10P (F-2)

8-12. CAPSTAN FG ADJUSTMENT

Machine condition for adjustment	Specifications	Adjustments
• Play back the alignment tape WR5-8CSE.	CH-1 : TP1/DI-12 (L-4) CH-2 : TP2/DI-12 (L-3)  When the TP1 signal is rising-up, TP2 is Low level.	CH-1 ⊘RV401/DI-12 (M-3) CH-2 ⊘RV402/DI-12 (K-3)

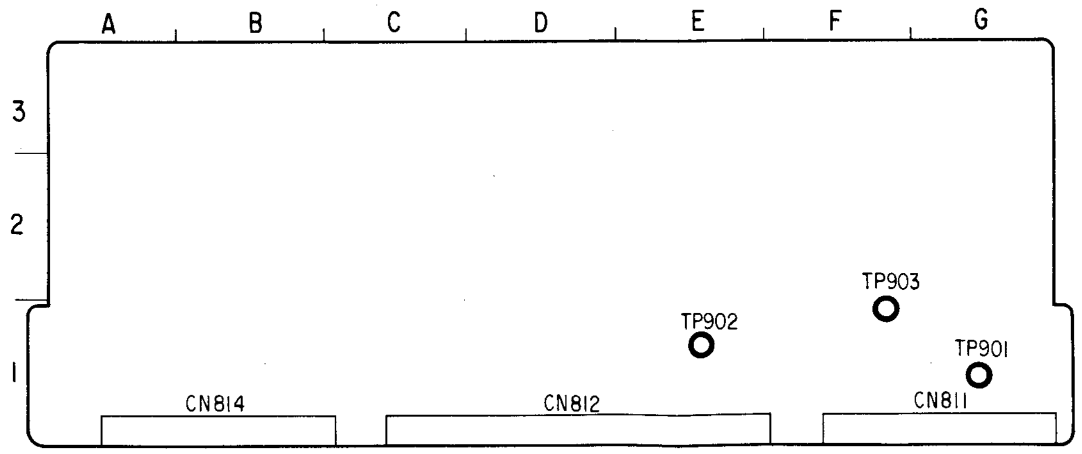
Location of TPs on the SE-10P Board.



CN003
CN002
CN001
TP601
TP101
TP002
CN907
TP102
TP108
TP107
TP205
TP204
TP105
TP106
IC106
TP104
TP203
CN905
IC201
TP201
TP208
IC203
TP103
TP302
IC002
CN906
TP206
TP301
TP001
TP207
TP202
CN004
CN005
CN904
CN903
6
5
4
3
2
1
H
G
F
E
D
C
B
A

Place the unit on its right side down. Remove the Bottom Plate and Core Shield Plate. Open the HK-5 Board.

Location of TPs on the MD-23P Board.



A
B
C
D
E
F
G
3
2
1
TP903
TP902
TP901
CN814
CN812
CN811

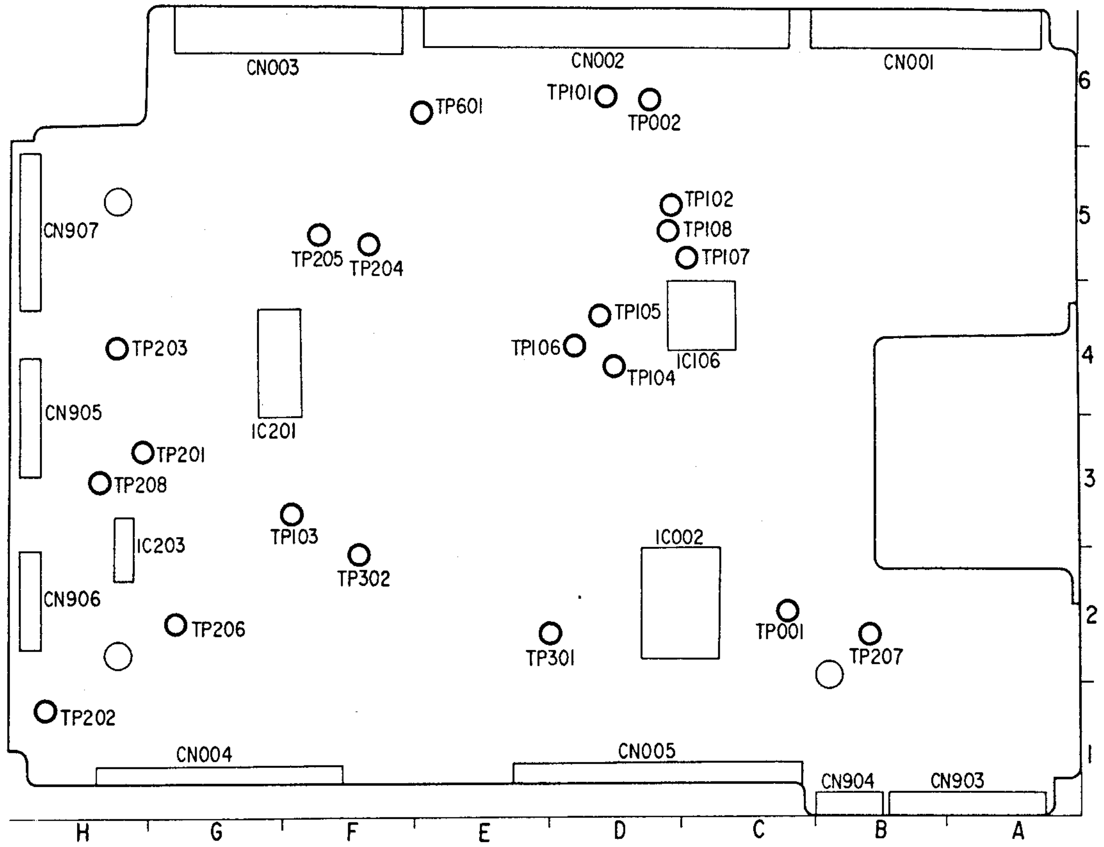
Loc

Pla

Loc

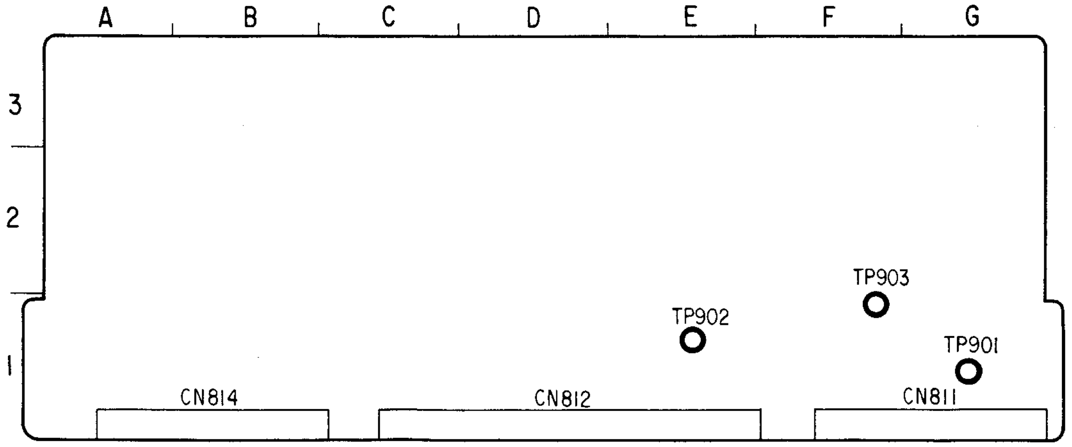
Adj
dec

Location of TPs on the SE-10P Board.

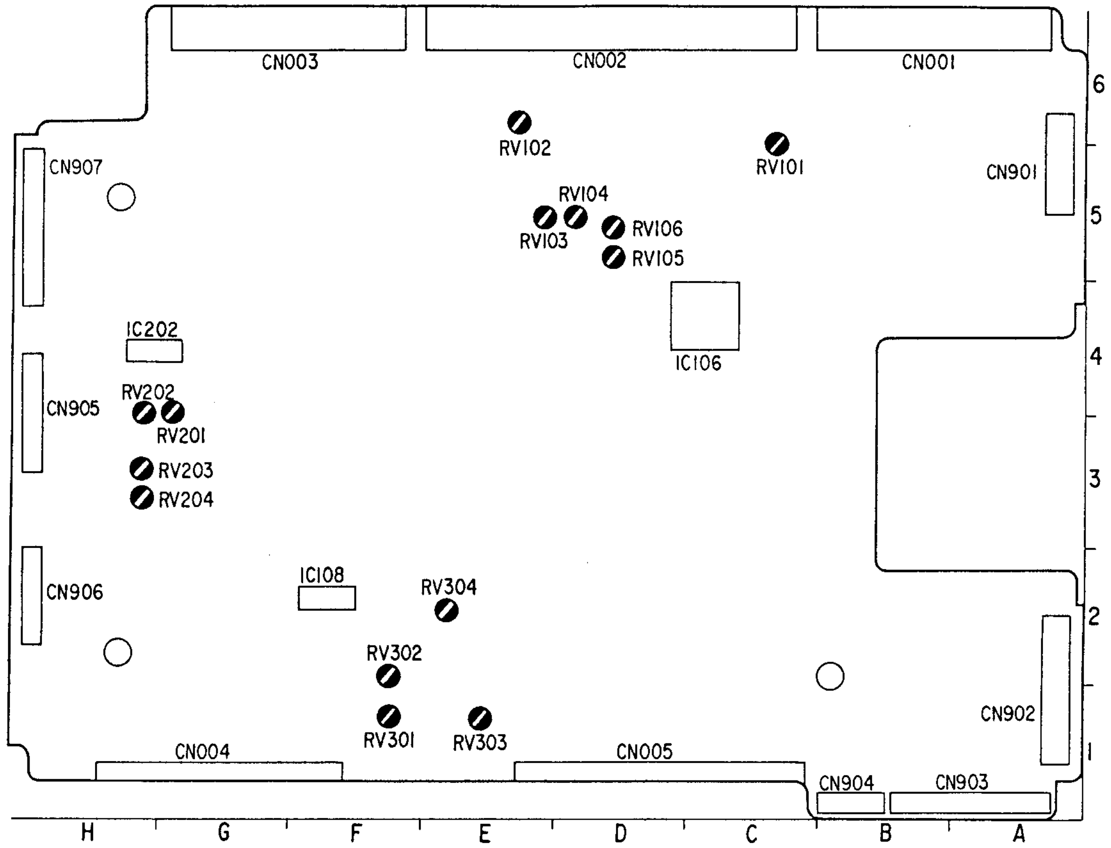

CN003
CN002
CN001
TP601
TP101
TP002
TP102
TP108
TP107
TP105
TP106
TP104
IC106
CN907
TP205
TP204
TP203
IC201
CN905
TP201
TP208
IC203
TP103
TP302
IC002
CN906
TP206
TP301
TP001
TP207
TP202
CN004
CN005
CN904
CN903
6
5
4
3
2
1
H
G
F
E
D
C
B
A

Place the unit on its right side down. Remove the Bottom Plate and Core Shield Plate. Open the HK-5 Board.

Location of TPs on the MD-23P Board.

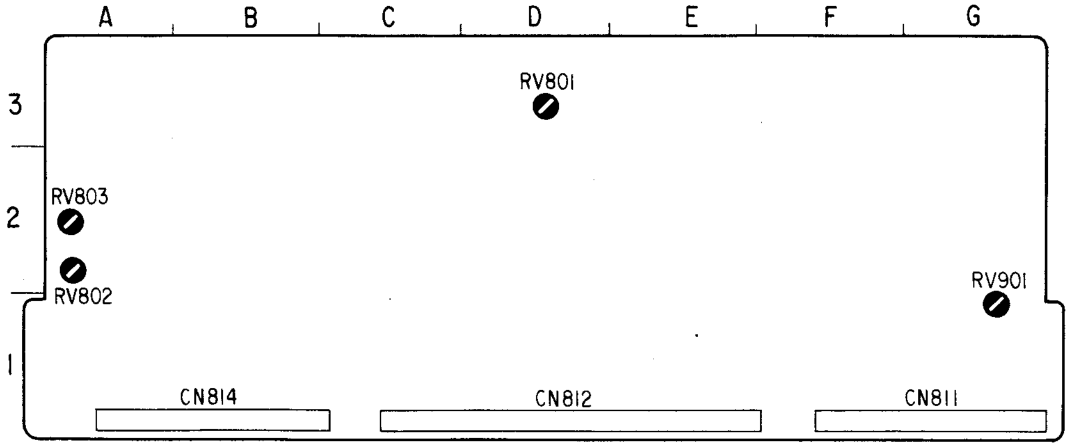

A
B
C
D
E
F
G
3
2
1
TP903
TP902
TP901
CN814
CN812
CN811

Location of RVs on the SE-10P Board.


CN003
CN002
CN001
RV102
RV101
CN907
CN901
RV104
RV103
RV106
RV105
IC202
IC106
RV202
CN905
RV201
RV203
RV204
IC108
RV304
CN906
RV302
CN902
RV301
RV303
CN004
CN005
CN904
CN903
6
5
4
3
2
1
H
G
F
E
D
C
B
A

Place the unit on its right side down. Remove the Bottom Plate and Core Shield Plate. Open the HK-5 Board.

Location of RVs on the MD-23P Board.


A
B
C
D
E
F
G
3
2
1
RV801
RV803
RV802
RV901
CN814
CN812
CN811

Adjust RVs from the soldering side holes. (It is unnecessary to remove the MD-23P Board from the mechanical deck.)

SECTION 9
AUDIO SIGNAL SYSTEM ALIGNMENT

[Equipment Required]

- Oscilloscope
- Frequency counter
- Audio signal generator
- Audio level meter
- Digital voltmeter
- Alignment tape

Name (Part No.)	REC mode	Tape Type	Tape Speed	Contents	
				Video Area	PCM Area
SP operation check WR5-8CSE (8-967-995-48)	Hi8	ME	SP	VIDEO SIGNAL Color-bar 4 min. Monoscope 4 min. AUDIO SIGNAL (AFM) 400 Hz 60% mod.	AUDIO SIGNAL (PCM) 400 Hz 20 min.

9-1. PCM MASTER CLOCK ADJUSTMENT

Note: Before adjustment, remove the PA-27 board.

Machine condition for adjustment	Specifications	Adjustments
• Connect pin 14 of IC853/PD-19 (A-1) and pin 11 of CN852/ PD-19 (A-2) with jumper wire. • E-E mode • After the adjustment, remove jumper wire.	IC853-8/PD-19 (A-1) 11.45±0.01 MHz	⊘RV851/PD-19 (A-2)

9-2. PCM PLAYBACK VCO FREE-FREQUENCY ADJUSTMENT

Note: Before adjustment, remove the PA-27 board.

Machine condition for adjustment	Specifications	Adjustments
• Connect pin 9 of CN851/PD-19 (B-1) and pin 11 of CN852/ PD-19 (C-3) with jumper wire. • Connect pins 7 and 8 of CN852/ PD-19 (C-3) with jumper wire. • E-E mode • After the adjustment, remove jumper wires.	IC854-8/PD-19 (A-2) 11.58±0.05 MHz	⊘RV854/PD-19 (A-2)

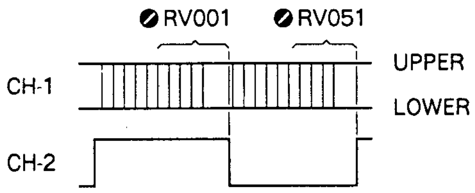
9-3. D/A CONVERTER LEVEL ADJUSTMENT

Machine condition for adjustment	Specifications	Adjustments
• Play back the Audio 400 Hz portion of the alignment tape WR5-8CSE.	CN001-16/PA-27 (A-2) −4.0±0.2 dBs	⊘RV032/PA-27 (A-1)

9-4. NR DECODE LEVEL ADJUSTMENT

Machine condition for adjustment	Specifications	Adjustments
• Play back the Audio 400 Hz portion of the alignment tape WR5-8CSE.	CN001-20/PA-27 (A-3) −14.0±0.5 dBs • If adjustment value doesn't meet the specification, change the value of resistors as follows and perform adjustment again. R062 12k → 13k R012 12k → 13k	⊘RV031/PA-27 (C-1)

9-5. A/D CONVERTER OFFSET ADJUSTMENT

Machine condition for adjustment	Specifications	Adjustments
• Connect pin 8 of CN001/PA-27 (A-2) to pin 17 of CN001/PA-27 (A-2) with jumper wire. • Connect pins 15 and 18 of CN001 with jumper wire. • Connect pins 4 and 5 of CN001 with jumper wire. • REC mode (no signal input) • After adjustment, remove jumper wires.	CH-1 : CN001-11/PA-27 (A-2) CH-2 : CN001-9/PA-27 (A-2)  Adjust upper and lower brightnesses for the same.	L-CH ⊘RV001/PA-27 (B-2) R-CH ⊘RV051/PA-27 (B-1)

9-6. PCM REC LEVEL ADJUSTMENT

Note : This adjustment should be performed after completion of 9-4. NR DECODED LEVEL ADJUSTMENT.

Machine condition for adjustment	Specifications	Adjustments
• AUDIO LINE IN : 400Hz/−10dB • Preform the self-recording/play back with a Hi8 ME tape.	L-CH : CN001-20/PA-27 (A-3) −13.5±0.1 dB	L-CH ⊘RV002/PA-27 (B-3)
	R-CH : CN001-1/PA-27 (A-1) −13.5±0.1 dB	R-CH ⊘RV052/PA-27 (B-1)

9-7. PCM PB LINE OUTPUT LEVEL ADJUSTMENT

Machine condition for adjustment	Specifications	Adjustments
• OUTPUT SELECT: PCM • Play back the 400 Hz portion of the alignment tape WR5-8CSE.	CH-1 AUDIO OUT connector (terminated with 600Ω) 4.0±0.3 dBm	CH-1 ⊘RV301/AU-127 (J-4)
	CH-2 AUDIO OUT connector (terminated with 600Ω) 4.0±0.3 dBm	CH-2 ⊘RV302/AU-127 (K-4)

9-8. AFM PB LINE OUTPUT LEVEL ADJUSTMENT

Machine condition for adjustment	Specifications	Adjustments
• OUTPUT SELECT: AFM • Play back the 400 Hz portion of the alignment tape WR5-8CSE.	CH-1 AUDIO OUT connector (terminated with 600Ω) 4.0±0.3 dBm	⊘RV351/AU-127 (D-3)

9-9. E-E LEVEL ADJUSTMENT

Note: The AUDIO LEVEL control should not be touch until rest Section 9 Audio Signal System Alignment.

Machine condition for adjustment	Specifications	Adjustments
• AUDIO LINE IN: 400 Hz/+4 dBs • AFM INPUT SELECT: CH-1 • OUTPUT SELECT: PCM • AUDIO LIMITER: OFF • Play back the Hi8 ME tape. • STOP mode	CH-1: TP102/AU-127 (G-3) CH-2: TP202/AU-127 (G-2) CH-1, CH-2=−12±0.3 dBm	CH-1 ⊘CH-1 AUDIO LEVEL/ Front Panel CH-2 ⊘CH-2 AUDIO LEVEL/ Front Panel

9-10. E-E PB LINE OUTPUT LEVEL ADJUSTMENT

Machine condition for adjustment	Specifications	Adjustments
• AUDIO LINE IN: 400 Hz/+4 dBs • OUTPUT SELECT: PCM • E-E mode	CH-1 AUDIO OUT connector (terminated with 600Ω) 4.0±0.3 dBm	CH-1 ⊘RV401/AU-127 (F-3)
	CH-2 AUDIO OUT connector (terminated with 600Ω) 4.0±0.3 dBm	CH-2 ⊘RV501/AU-127 (F-2)

9-11. AUDIO LEVEL METER ADJUSTMENT

Machine condition for adjustment	Specifications	Adjustments
• AUDIO LINE IN: 400 Hz/+4 dBs • OUTPUT SELECT: PCM • E-E mode	CH-1 AUDIO LEVEL METER 0±0.5 dB	CH-1 ⊘RV601/AU-127 (A-3)
	CH-2 AUDIO LEVEL METER 0±0.5 dB	CH-2 ⊘RV701/AU-127 (A-3)

9-12. MIC INPUT LEVEL ADJUSTMENT (CH-1)

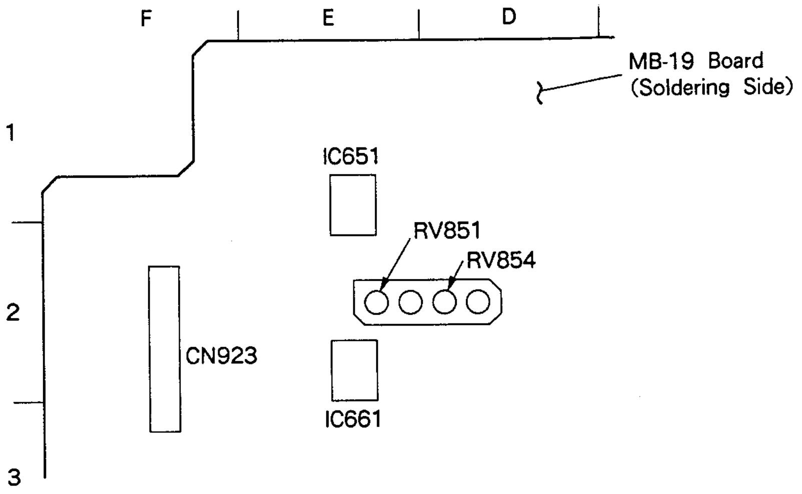
Machine condition for adjustment	Specifications	Adjustments
• OUTPUT SELECT: PCM • Play back the Hi8 ME tape. • STOP mode		
Step 1 • MIC IN: 400 Hz/—60 dBs • AUDIO LIMITER: OFF	TP102/AU-127 (G-3) A=—12±1 dBm	
Step 2 • MIC IN: 400 Hz/—30 dBs • AUDIO LIMITER: ON	TP102/AU-127 (G-3) (A+3.5)+1 dBm	⊘ RV101/AU-127 (G-4)

9-13. MIC INPUT LEVEL ADJUSTMENT (CH-2)

Machine condition for adjustment	Specifications	Adjustments
• OUTPUT SELECT: PCM • Play back the Hi8 ME tape. • STOP mode		
Step 1 • MIC IN: 400 Hz/—60 dBs • AUDIO LIMITER: OFF	TP202/AU-127 (G-2) A=—12±1 dBm	
Step 2 • MIC IN: 400 Hz/—30 dBs • AUDIO LIMITER: ON	TP202/AU-127 (G-2) (A+3.5)±1 dBm	⊘ RV201/AU-127 (H-2)

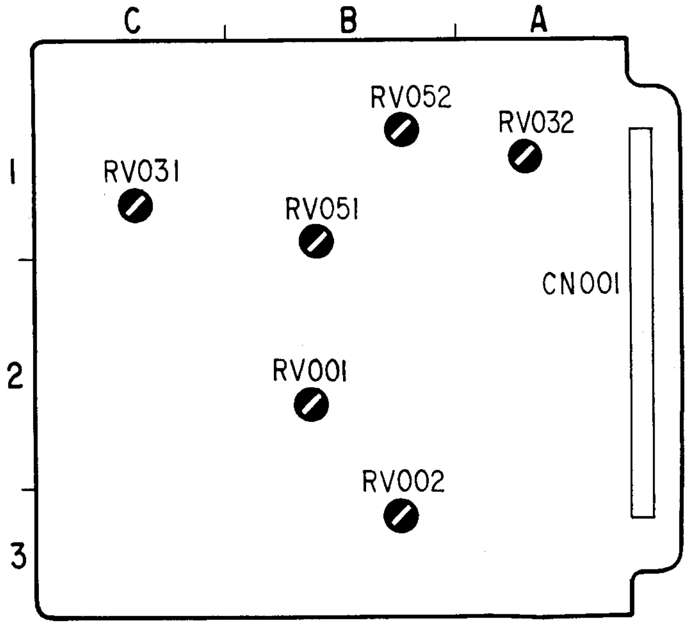
Location of RVs on the PD-19 Board.

Adjust RV851 and RV854 on the PD-19 Board from the soldering side holes of MB-19 Board.


F
E
D
MB-19 Board
(Soldering Side)
1
2
3
IC651
RV851
RV854
CN923
IC661

Location of RVs on the PA-27 Board.

Open the MB-19 Board and remove the shield case lid. Adjust RVs from the soldering side holes. (It is unnecessary to remove the PA-27 Board from the mechanical deck.)


C
B
A
1
2
3
RV052
RV032
RV031
RV051
CN001
RV001
RV002

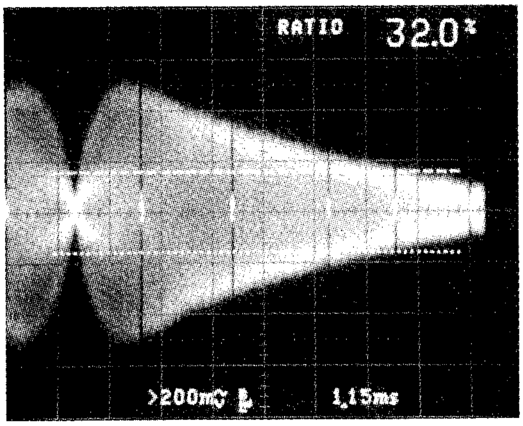
SECTION 10
VIDEO SIGNAL SYSTEM ALIGNMENT

[Equipment Required]

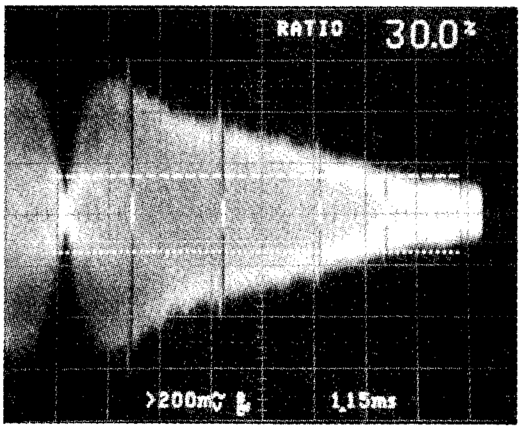
- Oscilloscope
- Frequency counter
- Test signal generator
- Vectorscope
- Vectorscope
- Sweep generator

Name (Part No.)	REC mode	Tape Type	Tape Speed	Contents	
				Video Area	PCM Area
Video freq. resp. WR5-7CE (8-967-995-18)	Hi8	ME	SP	RF sweep 0 to 15 MHz Marker: 2.0 MHz 4.5 MHz 7.0 MHz 8.5 MHz 10.0 MHz	
SP operation check WR5-5CSP (8-967-995-47)	STD	MP	SP	VIDEO SIGNAL Color-bar 4 min. Monoscope 4 min. AUDIO SIGNAL (AFM) 400 Hz 60% mod.	AUDIO SIGNAL (PCM) Monoscope Section 20 Hz 20 sec. 400 Hz 20 sec. 14 kHz 20 sec. Color-Bar Section 1 kHz 4 min.
SP operation check WR5-8CSE (8-967-995-48)	Hi8	ME	SP		AUDIO SIGNAL (PCM) 400 Hz 20 min.
LP operation check WR5-8CLE (8-967-995-57)	Hi8	ME	LP	VIDEO SIGNAL Color-bar 4 min. Monoscope 4 min. AUDIO SIGNAL (AFM) 400 Hz 60% mod.	AUDIO SIGNAL (PCM) 400 Hz 40 min.

10-1. SP PB FREQUENCY RESPONSE ADJUSTMENT

Machine condition for adjustment	Specifications	Adjustments
• Play back the alignment tape WR5-7CE.	TP031/FR-43 (C-2)  8.5 MHz=32^{+4}_{-0}% (in reference to 2 MHz)	CH-1 adjust ⊘RV004/RP-103 Trigger: TP061/FR-43 (B-2) L level: CH-1
	TP031/FR-43 (C-2) 8.5 MHz=32^{+4}_{-0}% (in reference to 2 MHz)	CH-2 adjust ⊘RV003/RP-103 Trigger: TP061/FR-43 (B-2) H level: CH-2

10-2. LP PB FREQUENCY RESPONSE ADJUSTMENT

Machine condition for adjustment	Specifications	Adjustments
• Connect TP104/SE-10P (D-4) to ground with jumper wire. • Play back the alignment tape WR5-7CE. • After adjustment, remove a jumper wire.	TP031/FR-43 (C-2)  8.5 MHz=30^{+4}_{-0}% (in reference to 2 MHz)	CH-1 adjust ⊘RV004/RP-73 (LP) Trigger: TP061/FR-43 (B-2) L level: CH-1
	TP031/FR-43 (C-2) 8.5 MHz=30^{+4}_{-0}% (in reference to 2 MHz)	⊘RV003/RP-73 (LP) Trigger: TP061/FR-43 (B-2) H level: CH-2

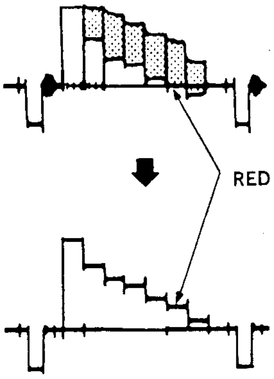
10-3. FLYING ERASE CONFIRMATION

Machine condition for adjustment	Specifications	Adjustments
• VIDEO IN: color-bar signal • Use a Hi8 ME tape. • REC mode	TP041/FR-43 (C-1) 8.0±0.5 MHz	

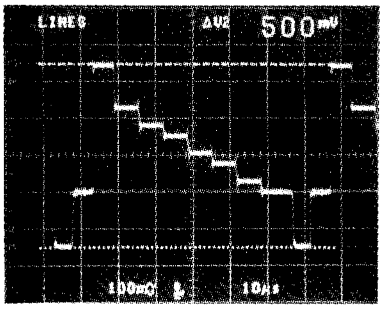
10-4. SUBCARRIER FREQUENCY ADJUSTMENT

Machine condition for adjustment	Specifications	Adjustments
• DIGITAL CNR SW: AUTO • VIDEO IN: no signal • PB mode	CN914-7/HK-5 (H-3) 4433618±5 Hz	⊘ CV601/HK-5 (B-4)

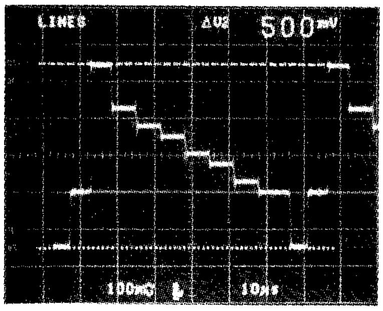
10-5. PB C COMB FILTER ADJUSTMENT

Machine condition for adjustment	Specifications	Adjustments
• Supply the composite color-bar signal (Y=0.5 Vp-p, burst=0.15 Vp-p) to CN911-4/HK-5 (H-2). • E-E mode	IC501-26/HK-5 (B-3)  Minimize residual chroma component at RED portion (30 mVp-p or less)	⊘ RV502/HK-5 (B-2) ⊘ LV501/HK-5 (D-3)

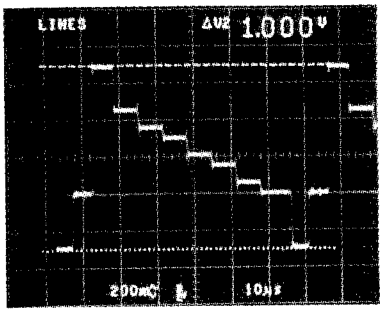
10-6. SYNC AGC ADJUSTMENT

Machine condition for adjustment	Specifications	Adjustments
• VIDEO IN : color-bar signal • E-E mode	TP402/HK-5 (D-1)  LINES ΔV2 500mV 10μs 0.50±0.02 V	⊘ RV302/HK-5 (E-1)

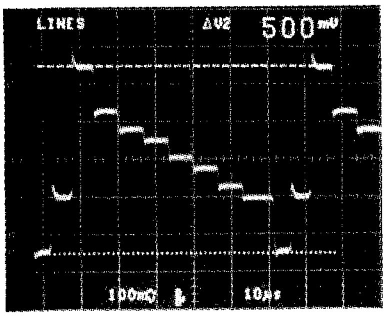
10-7. AGC OUTPUT LEVEL ADJUSTMENT

Machine condition for adjustment	Specifications	Adjustments
• VIDEO IN : color-bar signal • E-E mode	TP301/HK-5 (D-3)  LINES ΔV2 500mV 10μs 0.50±0.02 V	⊘ RV405/HK-5 (C-1)

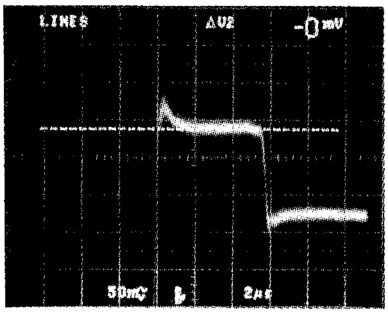
10-8. E-E Y OUTPUT LEVEL ADJUSTMENT

Machine condition for adjustment	Specifications	Adjustments
• VIDEO IN: color-bar signal • E-E mode	TP303/HK-5 (E-1)  1.00±0.05 V	⊘ RV301/HK-5 (E-1)

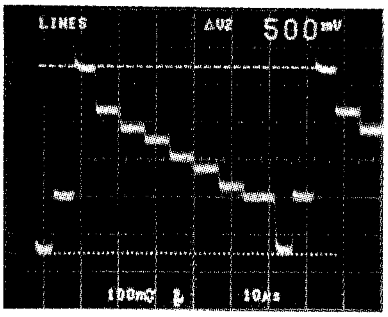
10-9. STD MODE PB Y LEVEL ADJUSTMENT

Machine condition for adjustment	Specifications	Adjustments
• Play back the color-bar signal portion of the alignment tape WR5-5CSP.	TP302/HK-5 (D-3)  0.50±0.02 V	⊘ RV304/HK-5 (E-3)

10-10. PB DE-EMPHASIS ADJUSTMENT

Machine condition for adjustment	Specifications	Adjustments
• Play back the color-bar signal portion of the alignment tape WR5-5CSP.	TP302/HK-5 (D-3)  100% white level=makes flat	⊘ RV304/HK-5 (D-2)

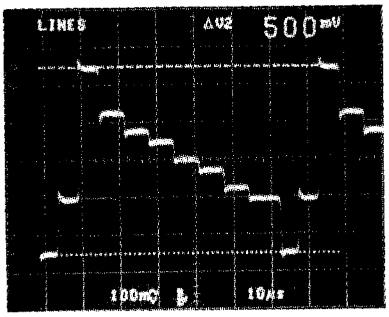
10-11. Hi8 MODE PB Y LEVEL ADJUSTMENT

Machine condition for adjustment	Specifications	Adjustments
• Play back the color-bar signal portion of the alignment tape WR5-8CSE.	TP302/HK-5 (D-3)  0.50±0.02 V	⊘ RV305/HK-5 (E-3)

10-12. STD MODE Y FM CARRIER ADJUSTMENT

Machine condition for adjustment	Specifications	Adjustments
• VIDEO IN: no signal • Use a P5-MP series tape. • E-E mode	IC401-14/HK-5 (D-2) 4.37±0.02 MHz	⊘ RV402/HK-5 (D-2)

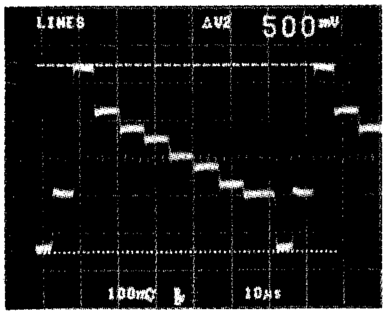
10-13. STD MODE Y FM DEVIATION ADJUSTMENT

Machine condition for adjustment	Specifications	Adjustments
• VIDEO IN: color-bar signal • Preform the self-recording/play back with a P5-MP series tape.	TP302/HK-5 (D-3)  0.50±0.02 V • Repeat recording and play back several times until the level meets the specification. Adjust the RV403 during recording.	⊘RV403/HK-5 (E-2) When turning in the clockwise direction, the level decreases.

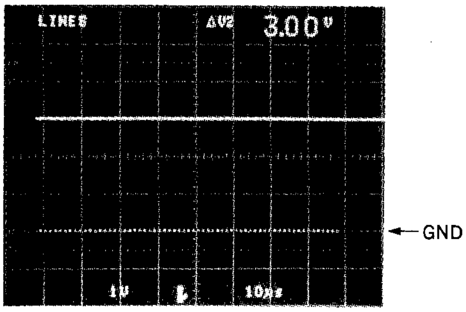
10-14. Hi8 MODE Y FM CARRIER ADJUSTMENT

Machine condition for adjustment	Specifications	Adjustments
• VIDEO IN: no signal • Use a Hi8 ME series tape. • E-E mode	TP401/HK-5 (D-3) 5.95±0.02 MHz	⊘RV401/HK-5 (D-2)

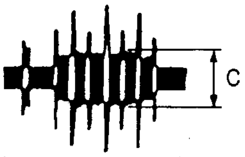
10-15. Hi8 MODE Y FM DEVIATION ADJUSTMENT

Machine condition for adjustment	Specifications	Adjustments
• VIDEO IN: color-bar signal • Preform the self-recording/play back with a Hi8 ME tape.	TP302/HK-5 (D-3)  0.50±0.02 V • Repeat recording and play back several times until the level meets the specification. Adjust RV404 during recording.	⊘RV404/HK-5 (D-2) When turning in the clockwise direction, the level decreases.

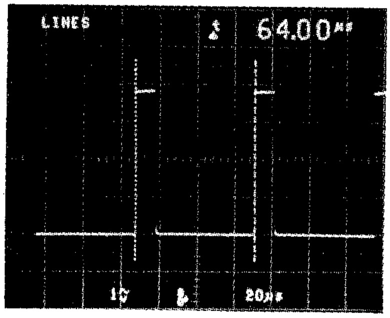
10-16. 375f_H VCO ADJUSTMENT

Machine condition for adjustment	Specifications	Adjustments
• VIDEO IN: color-bar signal • E-E mode	IC602-26/HK-5 (B-4)  3.0±0.05Vdc	⊘ RV601/HK-5 (A-4)

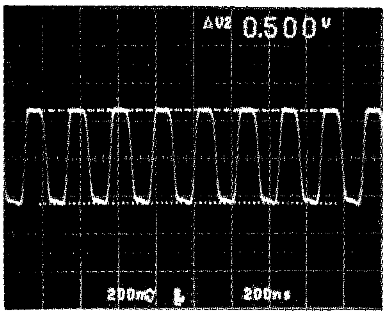
10-17. CHROMA EMPHASIS f_0 ADJUSTMENT

Machine condition for adjustment	Specifications	Adjustments
• Connect pin 47 of IC602 to TP904/HK-5 (F-5) via 10 k ohm resistor. • Connect pin 47 of IC602 to ground via 10 k ohm resistor. • VIDEO IN: color-bar signal • E-E mode • After adjustment, remove the resistor.	IC601-11/HK-5 (A-5)  C (chroma component)=minimum	⊘ T602/HK-5 (B-6)

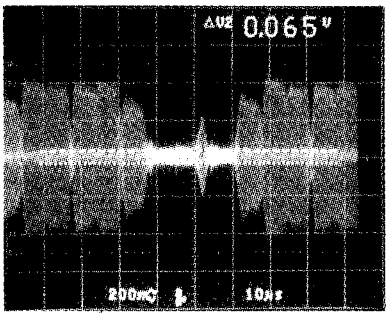
10-18. f_H VCO ADJUSTMENT

Machine condition for adjustment	Specifications	Adjustments
• VIDEO IN: color-bar signal • E-E mode	IC801-15/HK-5 (A-3)  15625±10Hz	⊘ RV802/HK-5 (A-3)

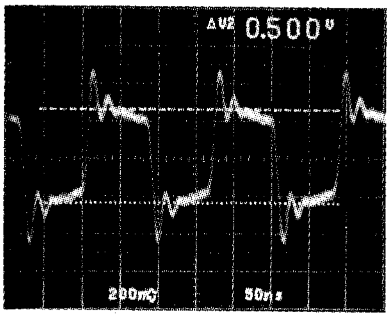
10-19. GAIN CONTROL AMP ADJUSTMENT

Machine condition for adjustment	**Specifications**	**Adjustments**
• Paly back the color-bar signal portion of the alignment tape WR5-8CSE.	IC801-22/HK-5 (A-3)  500±25mV	⊘RV801/HK-5 (A-3)

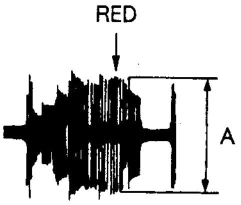
10-20. CARRIER BALANCE ADJUSTMENT

Machine condition for adjustment	**Specifications**	**Adjustments**
• Play back the color-bar signal portion of the alignment tape WR5-8CSE.	TP602/HK-5 (A-5)  3.7MHz or 5.17MHz component=minimum	⊘RV602/HK-5 (A-5)

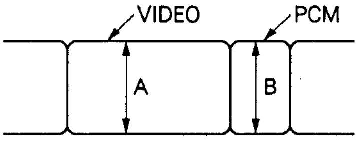
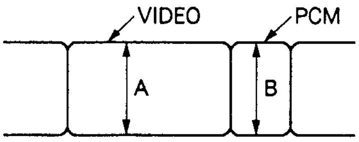
10-21. REC Y RF LEVEL ADJUSTMENT

Machine condition for adjustment	Specifications	Adjustments
• VIDEO IN: no signal • Use a Hi8 ME tape • E-E mode	TP201/HK-5 (F-5)  0.5±0.02 V	⊘ RV202/HK-5 (F-5)

10-22. REC C RF LEVEL ADJUSTMENT

Machine condition for adjustment	Specifications	Adjustments
• Perform following connections. Q211-emitter (F-5)↔ TP904/HK-5 (F-5). Q608-emitter (B-6)↔ ground • Remove the C216 (E-5). • VIDEO IN: color-bar signal • E-E mode • After adjustment, remove the jumper wires and solder chip capacitor to C216.	TP201/HK-5 (D-6)  A=100±10m V	⊘RV201/HK-5 (E-5)

10-23. SP REC CURRENT ADJUSTMENT

Machine condition for adjustment	Specifications	Adjustments
• VIDEO IN: 50% white signal • Use a Hi8 ME tape • REC mode	TP001/FR-43 (A-1)  A (VIDEO)=200±10 mV	VIDEO CH-1 ⊘RV002/FR-43 (C-2) Trigger: TP061/FR-43 (B-2)
	TP002/FR-43 (C-1)  A (VIDEO)=200±10 mV B (PCM)=200±10 mV	VIDEO CH-2 ⊘RV001/FR-43 (B-2) PCM ⊘RV002/RP-103 Trigger: TP061/FR-43 (B-2)

Note: LP REC CURRENT ADJUSTMENT (RV001, RV002) is unnecessory.

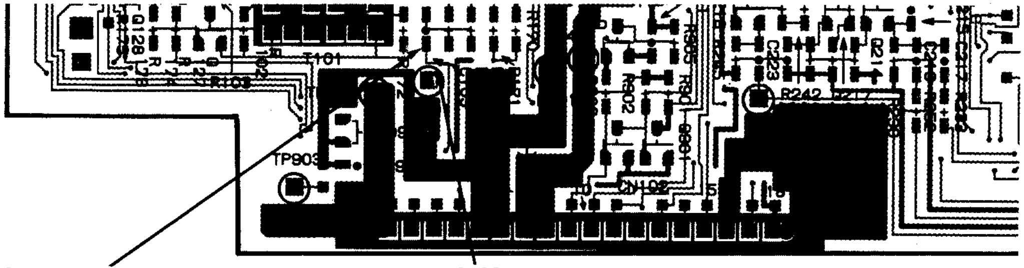
10-24. DOC LEVEL ADJUSTMENT

Step 1.

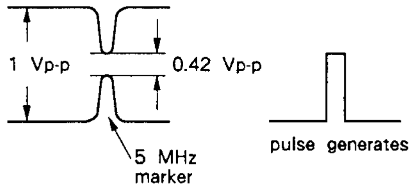
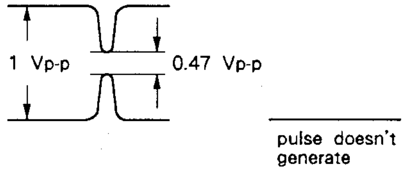
Note: Remove C103 on the HK-5 Board (G-5) for this adjustment. Use the sweep generator and put the marker in the 5 MHz portion. Adjust the level of maker to the level described below steps with variable volume of the sweep generator. After adjustment, solder the chip capacitor (0.047μF) to C103 on the HK-5 Board (G-5).
Be sure to use the new capacitor. (1-163-035-00)

Connect the output of sweep generator to the point of HK-5 Board after removing C103 as described below.

HK-5 soldering side



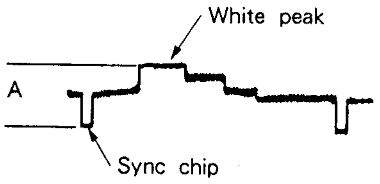
Connect the sweep generator at this point C103

Machine condition for adjustment	Specifications	Adjustments
• Play back the alignment tape WR5-7CE. • Adjust the marker level of the sweep generator to meet the specification.	IC501-17/HK-5 (C-2)  	⊘RV101/HK-5 (H-4)

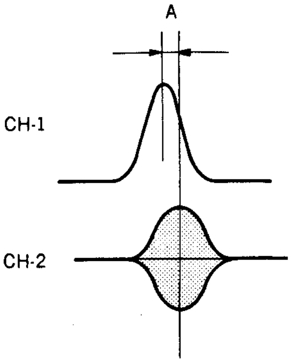
• After adjustment, remove the sweep generator and solder chip capacitor to C103.

Step 2.

Use the oscilloscope in this adjustment.

Machine condition for adjustment	Specifications	Adjustments
• Supply the composite color-bar signal (Y=0.5 Vp-p, Burst=0.15 Vp-p, chroma OFF) to CN911-4 pin on the HK-5 Board (H-2).	TP501/HK-5 (C-2)  A=0±150 mVp-p	⊘RV501/HK-5 (B-2)

10-25. Y/C DELAY ADJUSTMENT

Machine condition for adjustment	Specifications	Adjustments
• VIDEO IN: pulse & bar signal • E-E mode	CH-1 : TP303/HK-5 (E-1) CH-2 : TP801/HK-5 (A-1)  Minimize the A	⊘RV700/HK-5 (H-5)

10-26. CARRIER-LEAK CANCEL ADJUSTMENT (1)

10-26-1. External Sync AFC Adjustment

Machine condition for adjustment	**Specifications**	**Adjustments**
• SYNC IN: color-bar signl • E-E mode	TP731/DI-13 (F-2) 2.5±0.1 Vdc	⊘ CV11/DI-13 (F-3)
	TP732/DI-13 (E-6) 2.5±0.1 Vdc	⊘ CV21/DI-13 (E-6)
	TP801/DI-12 (A-2) 2.5±0.1 Vdc	⊘ CV31/DI-12 (A-3)

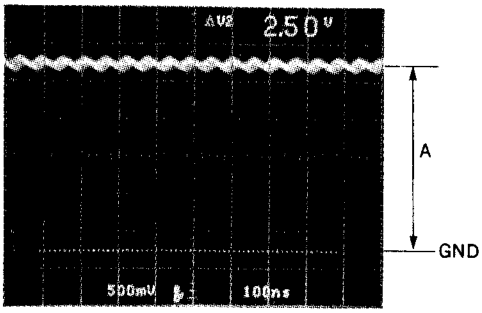
10-26-2. Sync Generator Clock Adjustment

Machine condition for adjustment	**Specifications**	**Adjustments**
• SYNC IN: no signal • E-E mode	TP760/DI-13 (E-5) 17734475±50 Hz	⊘ RV750/DI-13 (D-4)

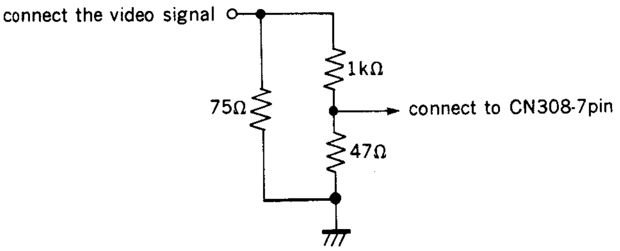
10-26-3. AFC Adjustment

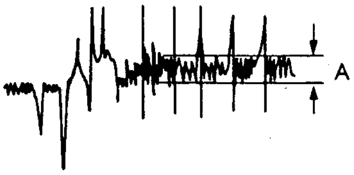
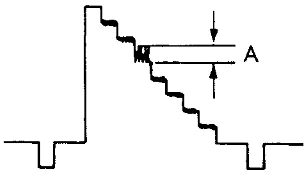
Machine condition for adjustment	**Specifications**	**Adjustments**
• VIDEO IN: no signal • E-E mode	TP203/DI-12 (H-2) 14218.75±50 kHz	⊘ CV301/DI-12 (H-1)

10-26-4. APC Adjustment

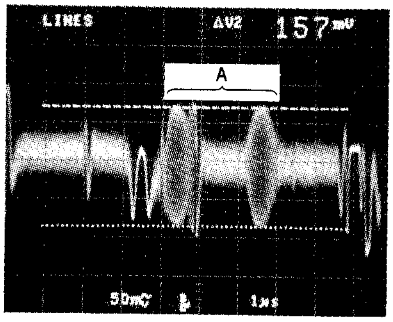
Machine condition for adjustment	**Specifications**	**Adjustments**
• Play back the color-bar signal portion of the alignment tape WR5-8CSE.	TP205/DI-12 (H-4)  A=2.5±0.3 Vdc	⊘ CV302/DI-12 (J-4)

10-27. CARRIER-LEAK CANCEL ADJUSTMENT(2)

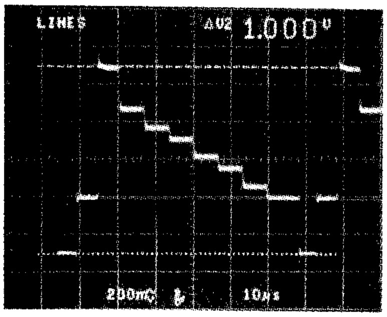


Machine condition for adjustment	Specifications	Adjustments
• Disconnect CN308 of VO-30 Board (H-5). • Solder a resister to the pattern of CN308-7 pin as described above. • Connect the pulse & bar signal to 1 k ohm resister. • E-E mode	TP1/VO-30 (L-4)  A (burst portion)=minimum	⊘ RV1/VO-30 (K-5)
• Disconnect CN308 of V0-30 Board (H-5). • Solder a resister to the pattern of CN308-7 pin as described above. • Connect the color-bar signal to 1 k ohm resister. • E-E mode • After adjustment, remove the resistor and connect CN308.	TP4/VO-30 (J-2)  A (chroma)=minimum (minimize the all chroma components)	⊘ RV2/VO-30 (J-4) ⊘ RV3/VO-30 (J-3)

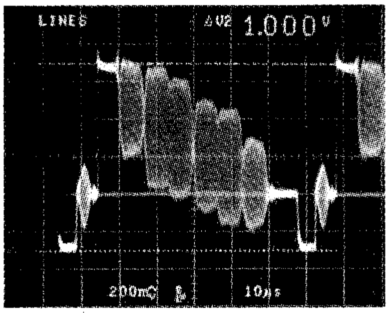
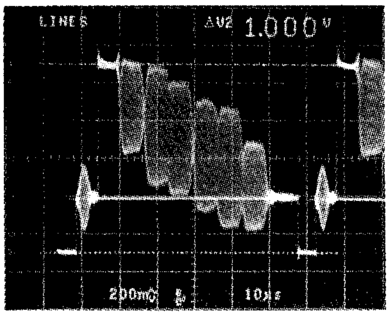
10-28. NOISE CANCEL ADJUSTMENT

Machine condition for adjustment	Specifications	Adjustments
• VIDEO IN: color-bar signal • Connect TP2 (L-4) and E1 (L-4) on the VO-30 board with jumper wire. • E-E mode • After adjustment, remove jumper wire.	CH-1 : TP51/VO-30 (H-2) CH-2 : TP52/VO-30 (J-1) (Level of TP51)×2=level of TP52	⊘RV51/VO-30 (J-1)
	TP53/VO-30 (J-2)  A (burst portion)=minimum	⊘RV52/VO-30 (K-1)

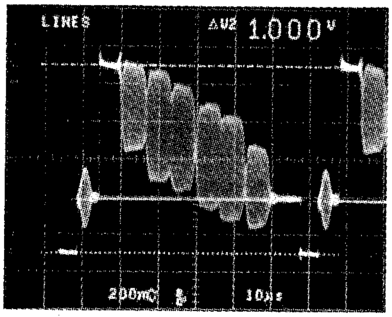
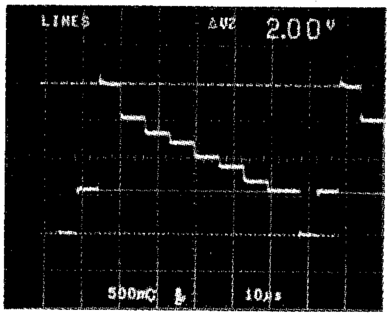
10-29. Y A/D OUTPUT LEVEL ADJUSTMENT

Machine condition for adjustment	Specifications	Adjustments
• Play back the color bar signal portion of the alignment tape WR5-8CSE.	TP651/DI-13 (B-7)  1.0±0.1 V	⊘RV201/DI-13 (G-5)

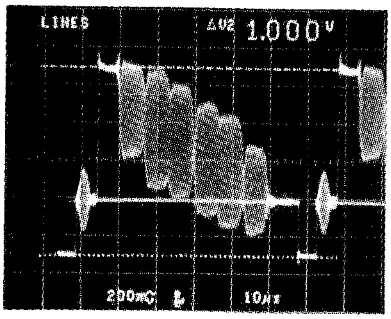
10-30. CNR MODE LINE OUTPUT LEVEL ADJUSTMENT

Machine condition for adjustment	**Specifications**	**Adjustments**
- VIDEO OUT: terminating with 75 ohm - Play back the color-bar signal portion of the alignment tape WR5-8CSE.		
Step 1 - DIGITAL CNR SW (sub panel): BYPASS	TP5/VO-30 (M-4)  Check the waveform is as shown in the figure. Value of this time is A.	
Step 2 - DIGITAL CNR SW (sub panel): AUTO	TP5/VO-30 (M-4)  B=A±0.01 Vp-p	⊘ RV651/DI-13 (B-3)

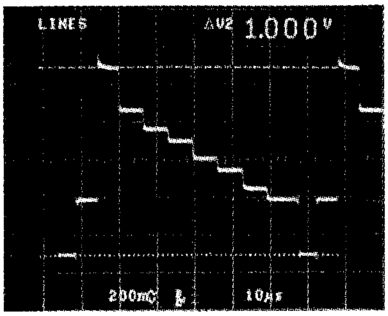
10-31. LINE OUTPUT LEVEL ADJUSTMENT

Machine condition for adjustment	Specifications	Adjustments
• VIDEO OUT : terminating with 75 ohm • Play back the color-bar signal portion of the alignment tape WR5-8CSE.	VIDEO OUT connector  1.00±0.05 V	⊘RV4/VO-30 (L-3)
	TP301/VO-30 (H-2)  2.0±0.1V	⊘RV302/VO-30 (G-1)

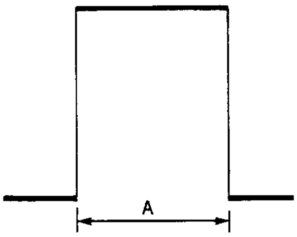
10-32. MONITOR OUTPUT LEVEL ADJUSTMENT

Machine condition for adjustment	Specifications	Adjustments
• Terminate the MONITOR OUT connector with 75 ohm terminator. • Play back the color-bar signal portion of the alignment tape WR5-8CSE.	TP101/VO-30 (M-3)  1.00±0.05 Vp-p	⊘RV101/VO-30 (H-4)

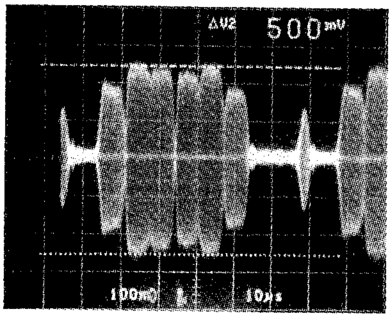
10-33. DUB Y OUTPUT LEVEL ADJUSTMENT

Machine condition for adjustment	Specifications	Adjustments
• Play back the color-bar signal portion of the alignment tape WR5-8CSE. • DUB OUT SW: HIGH/SP	TP202/VO-30 (H-5)  1.0±0.1 V	⊘ RV201/VO-30 (H-4)

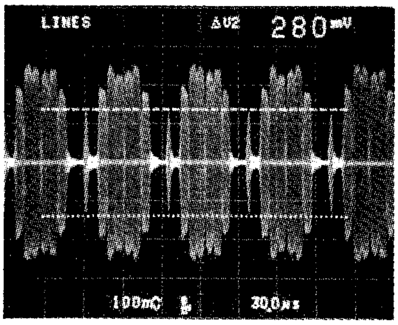
10-34. HIGH SPEED ACC GATE WIDTH ADJUSTMENT

Machine condition for adjustment	Specifications	Adjustments
• VIDEO IN: pulse & bar signal • E-E mode	TP403/VO-30 (A-3)  A=2.1±0.2μsec (Adjust at the jitter center)	⊘ RV400/VO-30 (A-1)

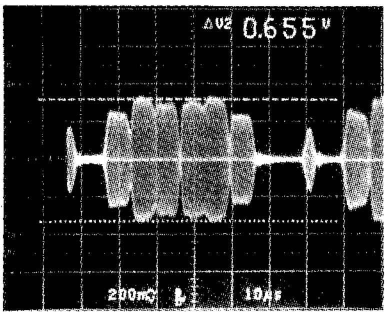
10-35. HIGH SPEED ACC LEVEL ADJUSTMENT

Machine condition for adjustment	Specifications	Adjustments
• DIGITAL CNR SW (sub panel): : BYPASS • Play back the color-bar signal portion of the alignment tape WR5-8CSE.	TP406/VO-30 (C-3)  0.5±0.05 V	⊘ RV403/VO-30 (B-4) Trigger: TP5/VO-30 (M-4)

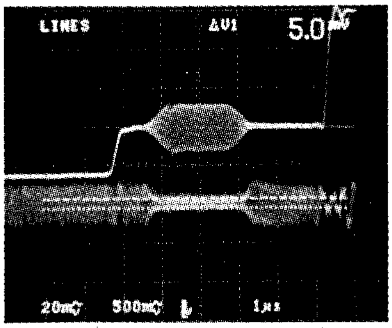
10-36. CHROMA A/D INPUT LEVEL ADJUSTMENT

Machine condition for adjustment	Specifications	Adjustments
• Play back the color bar signal portion of the alignment tape WR5-8CSE.	TP652/DI-13 (A-7)  A=0.286±0.01 Vp-p PB burst level=Replacement burst level (±0.01V)	⊘ RV202/DI-13 (H-5) Trigger: TP651/DI-13 (B-7)

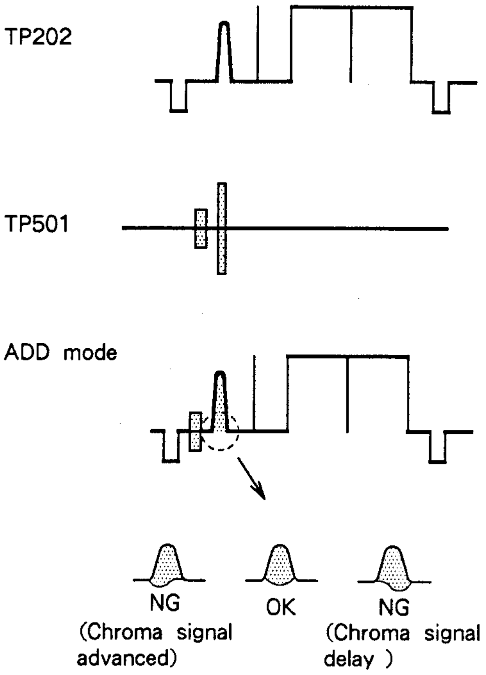
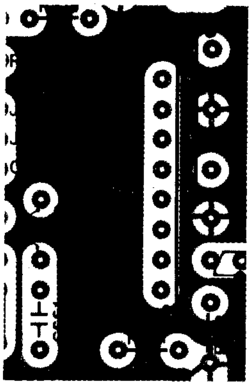
10-37. CNR MODE CHROMA OUTPUT LEVEL ADJUSTMENT

Machine condition for adjustment	Specifications	Adjustments
• Paly back the color-bar signal portion of the alignment tape WR5-8CSE.		
Step 1 • DIGITAL CNR SW: BYPASS	TP408/VO-30 (A-3) Value of this time is A.	
Step 2 • DIGITAL CNR SW: AUTO	TP408/VO-30 (A-3)  A±0.05 V	⊘RV652/DI-13 (A-3)

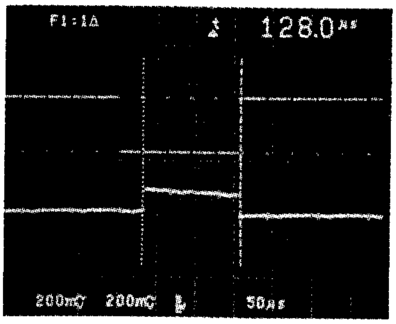
10-38. CHROMA NOISE CANCEL ADJUSTMENT

Machine condition for adjustment	Specifications	Adjustments
• VIDEO IN: color-bar signal • E-E mode	TP407/VO-30 (C-3)  burst portion=less than 10 mVp-p	⊘RV404/VO-30 (C-3) Trigger: TP5/VO-30 (M-4)

10-39. DUB Y/C DELAY ADJUSTMENT

Machine condition for adjustment	Specifications	Adjustments
• VIDEO IN: MOD 10T pulse signal • E-E mode • DUB OUT (U-matic) SW: LOW	CH-1: TP202/VO-30 (H-5) CH-2: TP501/VO-30 (D-5)  TP202 TP501 ADD mode NG (Chroma signal advanced) OK NG (Chroma signal delay)	⊘ DL500/VO-30 (F-3)  Set the waveform to OK position. Move the DL500 in the direction that chroma delays two taps, and solder it. Trigger: TP5/VO-30 (M-4)

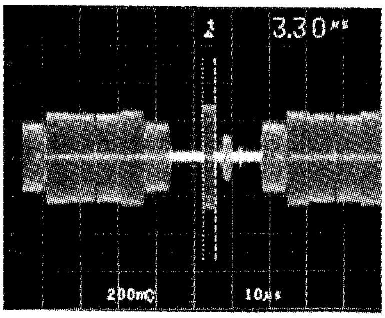
10-40. 1st FIELD PULSE WIDTH ADJUSTMENT

Machine condition for adjustment	Specifications	Adjustments
• Play back the color-bar signal portion of the alignment tape WR5-8CSE.	CH-1: TP602/VO-30 (A-2) CH-2: TP202/VO-30 (H-5)  F1:1Δ 128.0μs 200mV 200mV 50μs 128±30μsec	⊘ RV405/VO-30 (A-2)

10-41. LOCAL OSCILLATOR FREQUENCY ADJUSTMENT

Machine condition for adjustment	Specifications	Adjustments
• DUB OUT (U-matic) sw: LOW • VIDEO IN: no signal • E-E mode	TP502/VO-30 (E-3) 5119165±5Hz	⊘ CV500/VO-30 (E-1)
• DUB OUT (U-matic) sw: HIGH/SP • VIDEO IN: no signal • E-E mode	TP502/VO-30 (E-3) 5357447±5Hz	⊘ CV650/VO-30 (E-2)

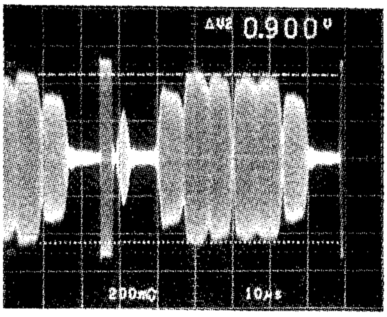
10-42. PILOT BURST ADJUSTMENT (1)

Machine condition for adjustment	Specifications	Adjustments
• VIDEO IN: color-bar signal • SYNC IN: black burst signal • E-E mode • Turn the GAIN knob of the vectorscope and adjust red beam spot to be in the center of "⊞" mark.	**STEP 1.** TP501/VO-30 (D-5) Put the pilot burst to the circle of vectorscope.	⊘ RV601/VO-30 (D-2)
	STEP 2. TP501/VO-30 (D-5)  3.3±0.1μsec	⊘ RV600/VO-30 (C-3)
	STEP 3. TP501/VO-30 (D-5) Put the pilot burst to the U axis of vectorscope. (within±1°)	⊘ LV600/VO-30 (D-1)

10-43. PILOT BURST ADJUSTMENT (2)

Machine condition for adjustment	Specifications	Adjustments
• Play back the color-bar signal portion of the alignment tape WR5-8CSE.	TP501/VO-30 (D-5) Put the pilot burst to the circule of vectorscope and align with U axis. (within±3°)	⊘ RV602/VO-30 (D-5)

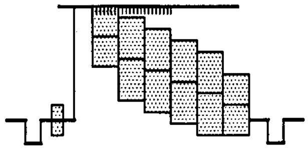
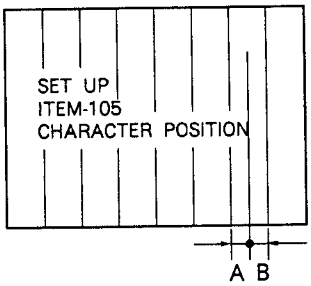
10-44. DUB CHROMA OUTPUT LEVEL ADJUSTMENT

Machine condition for adjustment	Specifications	Adjustments
• Play back the color-bar signal portion of the alignment tape WR5-8CSE.	TP503/VO-30 (F-5)  0.90±0.05 V	⊘ RV501/VO-30 (E-4) Trigger: TP5/VO-30 (M-4)

10-45. Y/C MIX ADJUSTMENT

Machine condition for adjustment	Specifications	Adjustments
• Play back the color-bar signal portion of the alignment tape WR5-8CSE.	VIDEO OUT connector • Adjust RV5 so that RED beam component should be in the center of ⊞ portion.	• RV5/VO-30 (L-4)

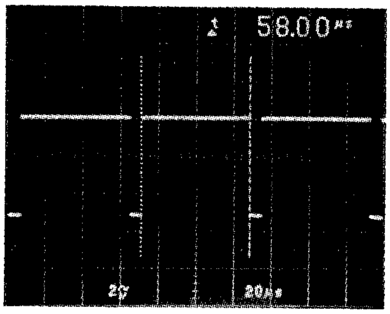
10-46. CHARACTER MIX ADJUSTMENT

Machine condition for adjustment	Specifications	Adjustments
• VIDEO IN: full color-bar signal • E-E mode • Set the COUNTER/TC/DIAL MENU SW to DIAL MENU. • Connect the monitor to MONITOR OUT connector. • After adjustment, set the COUNTER/TC/DIAL MENU SW to center.	TP101/VO-30 (M-3) • While pressing the MENU key, turn the Search Dial and set the counter value for "105". • Match the white level and the character level. 	• RV100/VO-30 (L-1)
	DISPLAY  Adjust CV100 so that the right edge of the character N is positioned in the center (A=B) of blue area.	⊘ CV100/SY-145A (J-5)

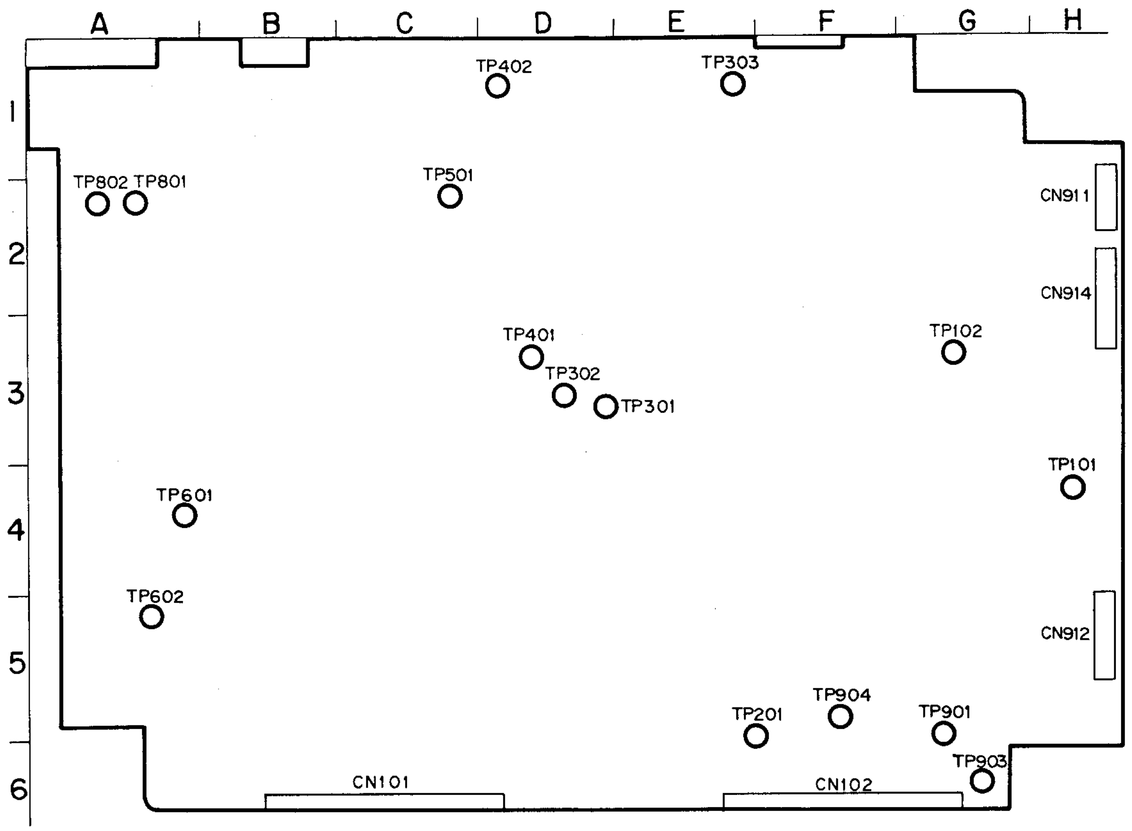
10-47. SLOW TRACKING ADJUSTMENT

Machine condition for adjustment	Specifications	Adjustments
• VIDEO IN: color-bar signal • Perform the self-recording/play back about 20 sec. with a Hi8 ME tape. • Set the Slow Adjust Volume of Sub Panel to the center click position. • Connect the counter to TP1/DI-12 (B-6). • Put the unit into the SHUTTLE mode and turn the Search Dial in the FWD direction so that the frequency is 192 Hz. Play back the recorded portion. (It corresponds to one-fifth time speed.)	Minimize the noise on the monitor screen.	⊘ RV1/SY-145A (C-1)

10-48. CHARACTER DISPLAY RANGE ADJUSTMENT

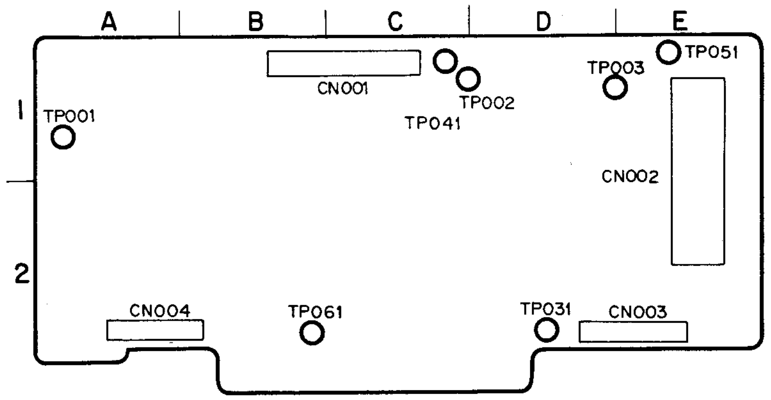
Machine condition for adjustment	Specifications	Adjustments
• VIDEO IN : color-bar signal • E-E mode	TP101/SY-145A (I-5)  58±1 µS	⊘ RV2/SY-145A (E-5)

Location of TPs on the HK-5 Board.


A
B
C
D
E
F
G
H
1
2
3
4
5
6
TP402
TP303
TP802
TP801
TP501
CN911
CN914
TP401
TP302
TP301
TP102
TP101
TP601
TP602
CN912
TP201
TP904
TP901
TP903
CN101
CN102

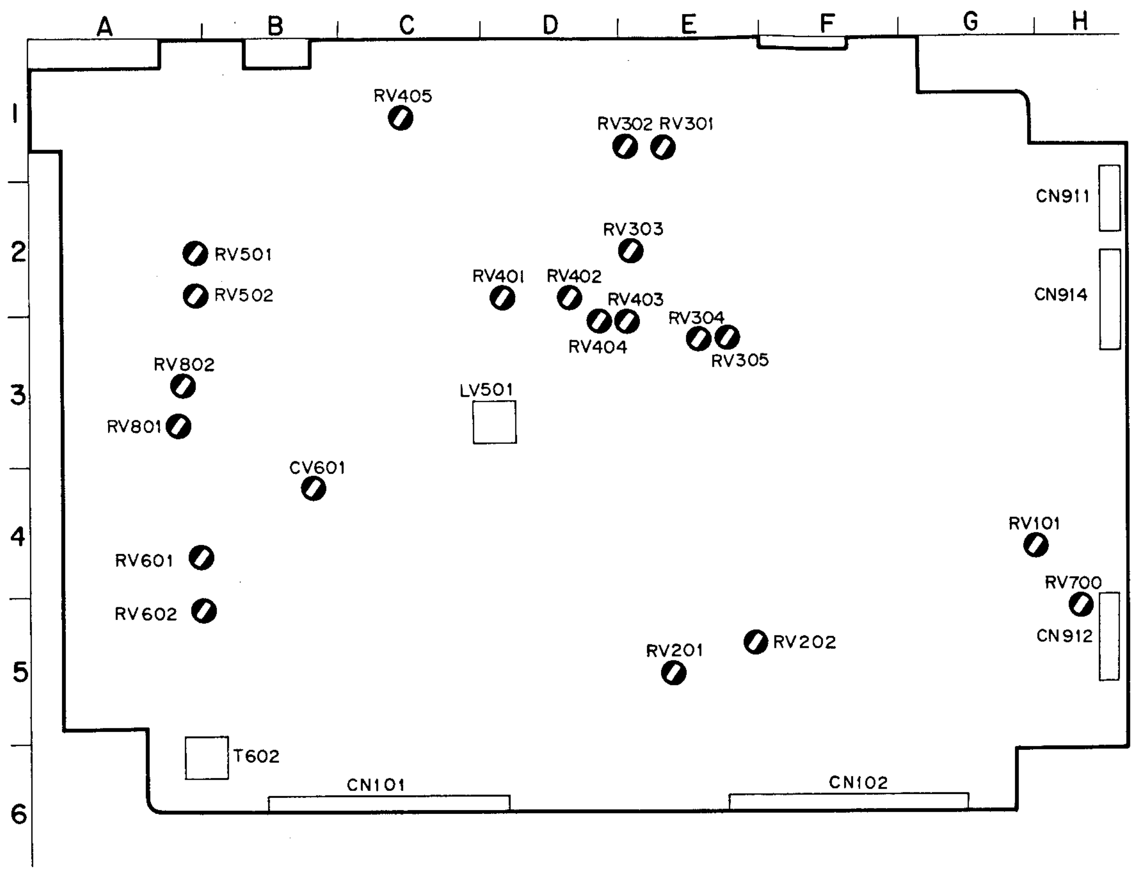
Place the unit on its right side down. Remove the Bottom Plate and Core Shield Plate. Open the HK-5 Board.

Location of TPs on the FR-43 Board.


A
B
C
D
E
1
2
CN001
TP002
TP041
TP003
TP051
TP001
CN002
CN004
TP061
TP031
CN003

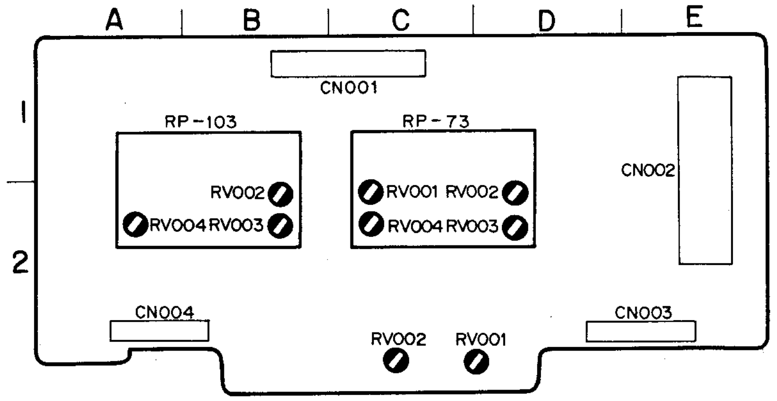
Remove the Top Plate and Open the MB-19 Board.

Locations of RVs, CVs, LVs and T on the HK-5 Board.


A
B
C
D
E
F
G
H
1
2
3
4
5
6
RV405
RV302
RV301
CN911
RV303
RV501
RV502
RV401
RV402
RV403
RV404
RV304
RV305
CN914
RV802
RV801
LV501
CV601
RV101
RV601
RV602
RV700
CN912
RV201
RV202
T602
CN101
CN102

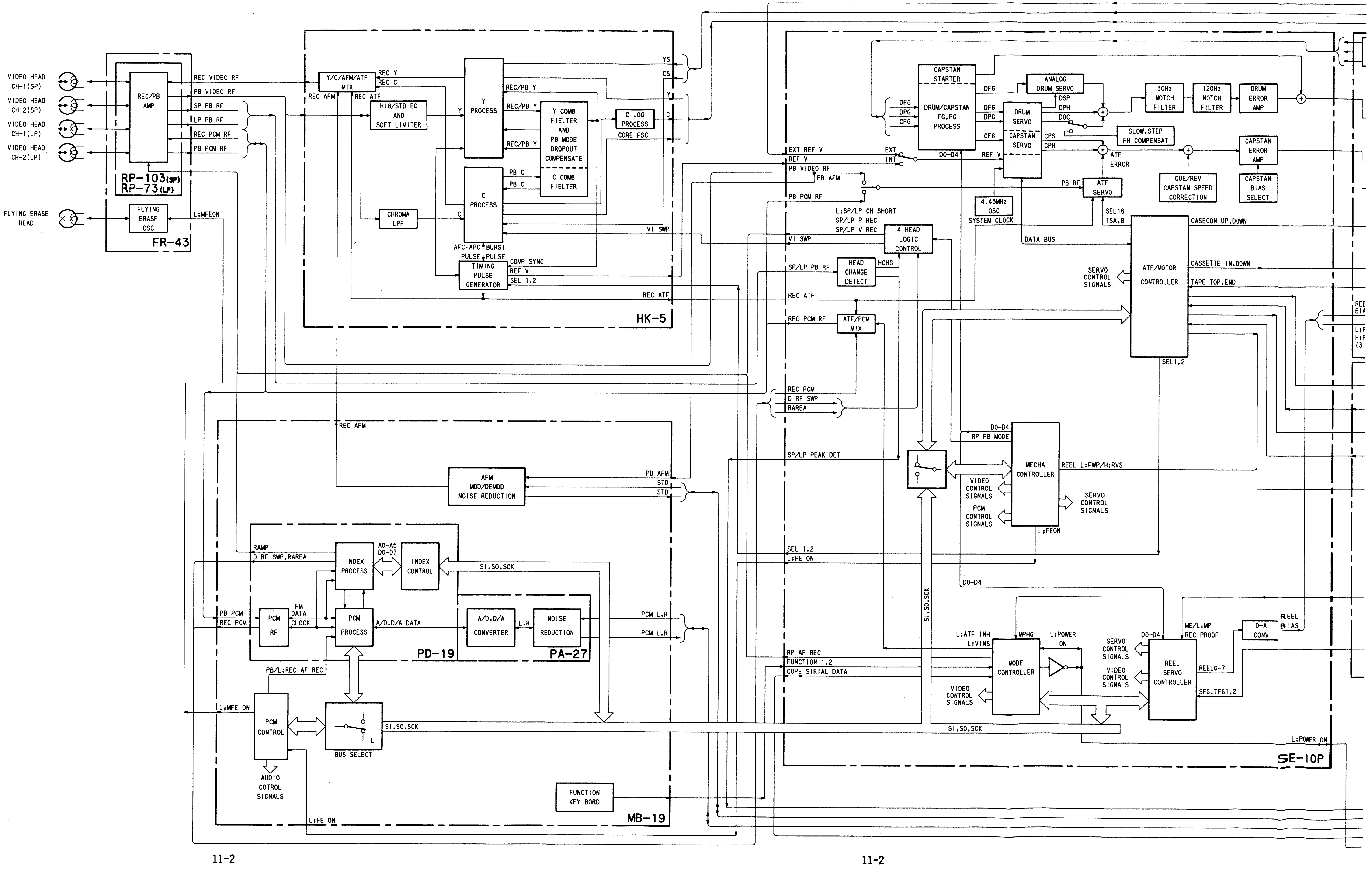
Place the unit on its right side down. Remove the Bottom Plate and Core Shild Plate. Open the HK-5 Board.

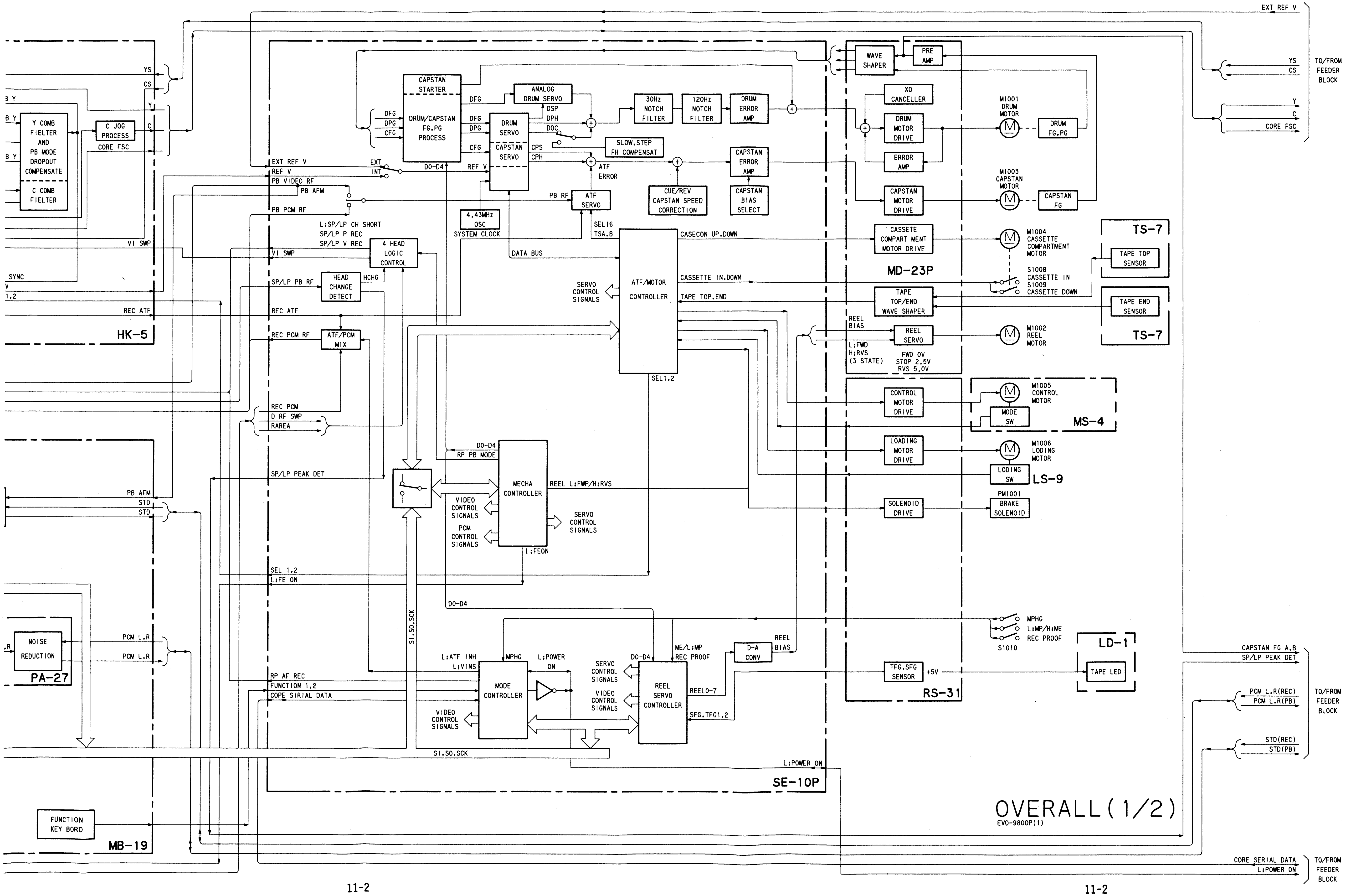
Location of RVs on the FR-43 and RP-73, RP-103 Boards.


A
B
C
D
E
1
2
CN001
RP-103
RP-73
CN002
RV002
RV004
RV003
RV001
RV002
RV004
RV003
CN004
RV002
RV001
CN003

Remove the Top Plate and Open the MB-19 Board.

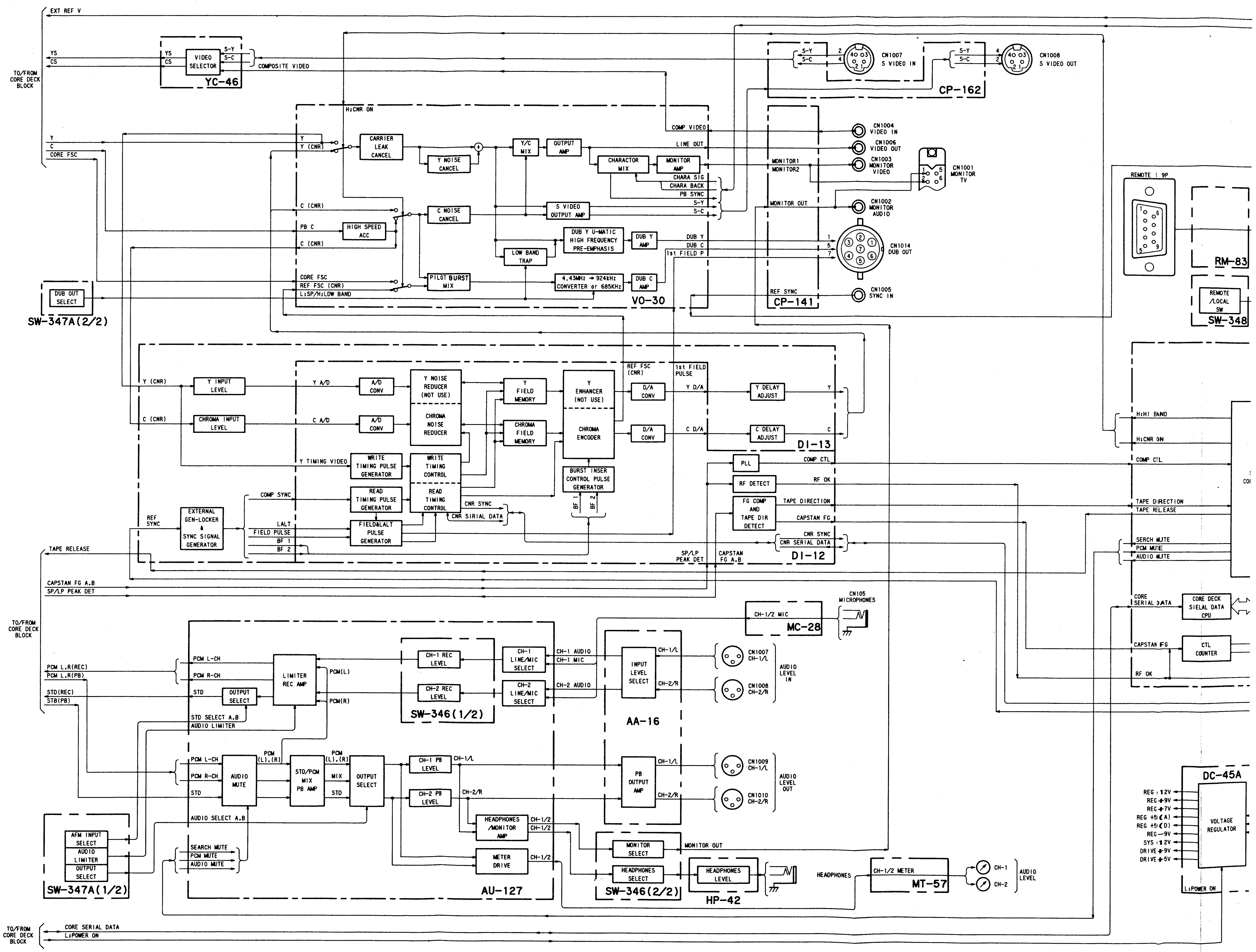
SECTION 11
BLOCK DIAGRAM

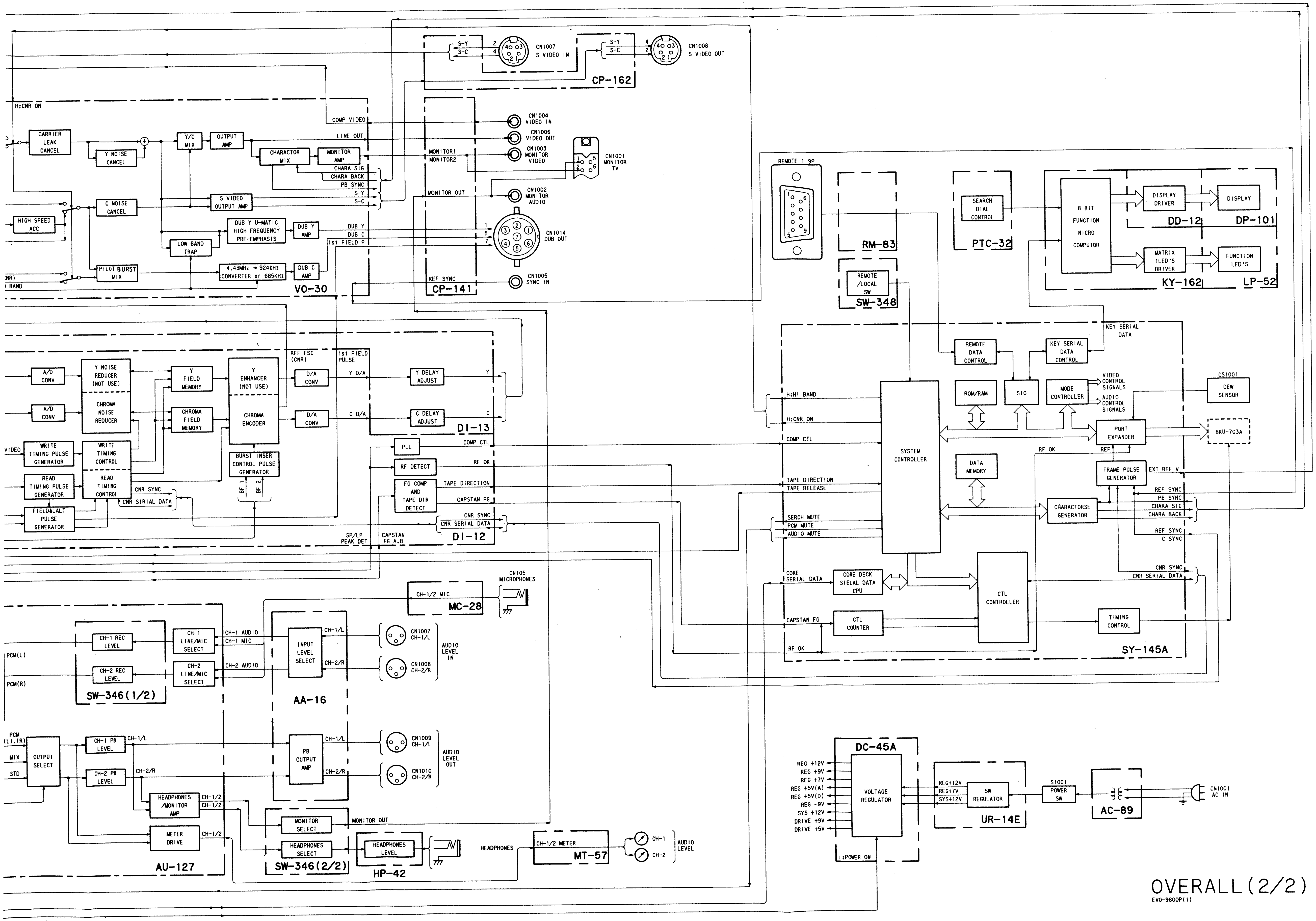

VIDEO HEAD CH-1(SP)
VIDEO HEAD CH-2(SP)
VIDEO HEAD CH-1(LP)
VIDEO HEAD CH-2(LP)
FLYING ERASE HEAD
REC/PB AMP
RP-103(SP)
RP-73(LP)
FLYING ERASE OSC
FR-43
L;MFEON
REC VIDEO RF
PB VIDEO RF
SP PB RF
LP PB RF
REC PCM RF
PB PCM RF
Y/C/AFM/ATF MIX
REC Y
REC C
REC AFM
REC ATF
HI8/STD EQ AND SOFT LIMITER
Y PROCESS
REC/PB Y
Y COMB FIELTER AND PB MODE DROPOUT COMPENSATE
C JOG PROCESS
CORE FSC
C PROCESS
PB C
C COMB FIELTER
CHROMA LPF
AFC·APC PULSE
BURST PULSE
TIMING PULSE GENERATOR
COMP SYNC
REF V
SEL 1,2
VI SWP
YS
CS
Y
C
HK-5
REC AFM
AFM MOD/DEMOD NOISE REDUCTION
PB AFM
STD
RAMP
D RF SWP,RAREA
INDEX PROCESS
A0-A5
D0-D7
INDEX CONTROL
SI,SO,SCK
PB PCM
REC PCM
PCM RF
FM DATA
CLOCK
PCM PROCESS
A/D,D/A DATA
A/D,D/A CONVERTER
L,R
NOISE REDUCTION
PCM L,R
PD-19
PA-27
PB/L;REC AF REC
L;MFE ON
PCM CONTROL
BUS SELECT
AUDIO COTROL SIGNALS
FUNCTION KEY BORD
L;FE ON
MB-19
EXT REF V
REF V
PB VIDEO RF
PB AFM
PB PCM RF
EXT
INT
L;SP/LP CH SHORT
SP/LP P REC
SP/LP V REC
4 HEAD LOGIC CONTROL
VI SWP
SP/LP PB RF
HEAD CHANGE DETECT
HCHG
REC ATF
REC PCM RF
ATF/PCM MIX
REC PCM
D RF SWP
RAREA
SP/LP PEAK DET
SEL 1,2
L;FE ON
RP AF REC
FUNCTION 1,2
COPE SIRIAL DATA
SI,SO,SCK
CAPSTAN STARTER
DFG
DPG
CFG
DRUM/CAPSTAN FG,PG PROCESS
D0-D4
ANALOG DRUM SERVO
DSP
DPH
DOC
DRUM SERVO
CAPSTAN SERVO
CPS
CPH
30Hz NOTCH FILTER
120Hz NOTCH FILTER
DRUM ERROR AMP
SLOW,STEP FH COMPENSAT
ATF ERROR
CUE/REV CAPSTAN SPEED CORRECTION
CAPSTAN ERROR AMP
CAPSTAN BIAS SELECT
4.43MHz OSC
SYSTEM CLOCK
PB RF
ATF SERVO
SEL16
TSA,B
DATA BUS
ATF/MOTOR CONTROLLER
SERVO CONTROL SIGNALS
CASECON UP,DOWN
CASSETTE IN,DOWN
TAPE TOP,END
SEL1,2
D0-D4
RP PB MODE
MECHA CONTROLLER
REEL L;FWP/H;RVS
VIDEO CONTROL SIGNALS
PCM CONTROL SIGNALS
SERVO CONTROL SIGNALS
L;FEON
D0-D4
L;ATF INH
L;VINS
MPHG
L;POWER ON
MODE CONTROLLER
VIDEO CONTROL SIGNALS
SERVO CONTROL SIGNALS
VIDEO CONTROL SIGNALS
D0-D4
ME/L;MP
REC PROOF
REEL SERVO CONTROLLER
REEL0-7
SFG,TFG1,2
D-A CONV
REEL BIAS
L;POWER ON
SE-10P
REE BIA
L;F H;R (3


EXT REF V
YS
CS
Y
C
CORE FSC
TO/FROM FEEDER BLOCK
Y COMB FIELTER AND PB MODE DROPOUT COMPENSATE
C COMB FIELTER
C JOG PROCESS
CORE FSC
VI SWP
SYNC
REC ATF
HK-5
CAPSTAN STARTER
DRUM/CAPSTAN FG,PG PROCESS
DFG
DPG
CFG
ANALOG DRUM SERVO
DRUM SERVO
CAPSTAN SERVO
DSP
DPH
DOC
CPS
CPH
30Hz NOTCH FILTER
120Hz NOTCH FILTER
DRUM ERROR AMP
SLOW,STEP FH COMPENSAT
CAPSTAN ERROR AMP
CUE/REV CAPSTAN SPEED CORRECTION
CAPSTAN BIAS SELECT
ATF ERROR
EXT REF V
REF V
EXT
INT
D0-D4
PB VIDEO RF
PB AFM
PB PCM RF
PB RF
ATF SERVO
4.43MHz OSC
SYSTEM CLOCK
SEL16
TSA,B
L;SP/LP CH SHORT
SP/LP P REC
SP/LP V REC
4 HEAD LOGIC CONTROL
VI SWP
DATA BUS
SP/LP PB RF
HEAD CHANGE DETECT
HCHG
REC ATF
REC PCM RF
ATF/PCM MIX
SERVO CONTROL SIGNALS
ATF/MOTOR CONTROLLER
CASECON UP,DOWN
CASSETTE IN,DOWN
TAPE TOP,END
SEL1,2
REC PCM
D RF SWP
RAREA
SP/LP PEAK DET
D0-D4
RP PB MODE
MECHA CONTROLLER
REEL L;FWP/H;RVS
VIDEO CONTROL SIGNALS
PCM CONTROL SIGNALS
SERVO CONTROL SIGNALS
L;FEON
PB AFM
STD
STD
SEL 1,2
L;FE ON
D0-D4
SI,SO,SCK
NOISE REDUCTION
PCM L,R
PCM L,R
PA-27
RP AF REC
FUNCTION 1,2
COPE SIRIAL DATA
L;ATF INH
L;VINS
MPHG
L;POWER ON
MODE CONTROLLER
VIDEO CONTROL SIGNALS
SERVO CONTROL SIGNALS
VIDEO CONTROL SIGNALS
D0-D4
ME/L;MP
REC PROOF
D-A CONV
REEL BIAS
REEL SERVO CONTROLLER
REEL0-7
SFG,TFG1,2
SI,SO,SCK
L;POWER ON
SE-10P
FUNCTION KEY BORD
MB-19
WAVE SHAPER
PRE AMP
XO CANCELLER
DRUM MOTOR DRIVE
ERROR AMP
CAPSTAN MOTOR DRIVE
M1001 DRUM MOTOR
DRUM FG,PG
M1003 CAPSTAN MOTOR
CAPSTAN FG
CASSETE COMPART MENT MOTOR DRIVE
M1004 CASSETTE COMPARTMENT MOTOR
S1008 CASSETTE IN
S1009 CASSETTE DOWN
MD-23P
TAPE TOP/END WAVE SHAPER
TS-7
TAPE TOP SENSOR
TAPE END SENSOR
TS-7
REEL BIAS
REEL SERVO
L;FWD H;RVS (3 STATE)
FWD 0V STOP 2.5V RVS 5.0V
M1002 REEL MOTOR
CONTROL MOTOR DRIVE
M1005 CONTROL MOTOR
MODE SW
MS-4
LOADING MOTOR DRIVE
M1006 LODING MOTOR
LODING SW
LS-9
SOLENOID DRIVE
PM1001 BRAKE SOLENOID
MPHG
L;MP/H;ME
REC PROOF
S1010
LD-1
TFG,SFG SENSOR
+5V
TAPE LED
RS-31
CAPSTAN FG A,B
SP/LP PEAK DET
PCM L,R(REC)
PCM L,R(PB)
TO/FROM FEEDER BLOCK
STD(REC)
STD(PB)
CORE SERIAL DATA
L;POWER ON
TO/FROM FEEDER BLOCK

OVERALL(1/2)
EVO-9800P(1)

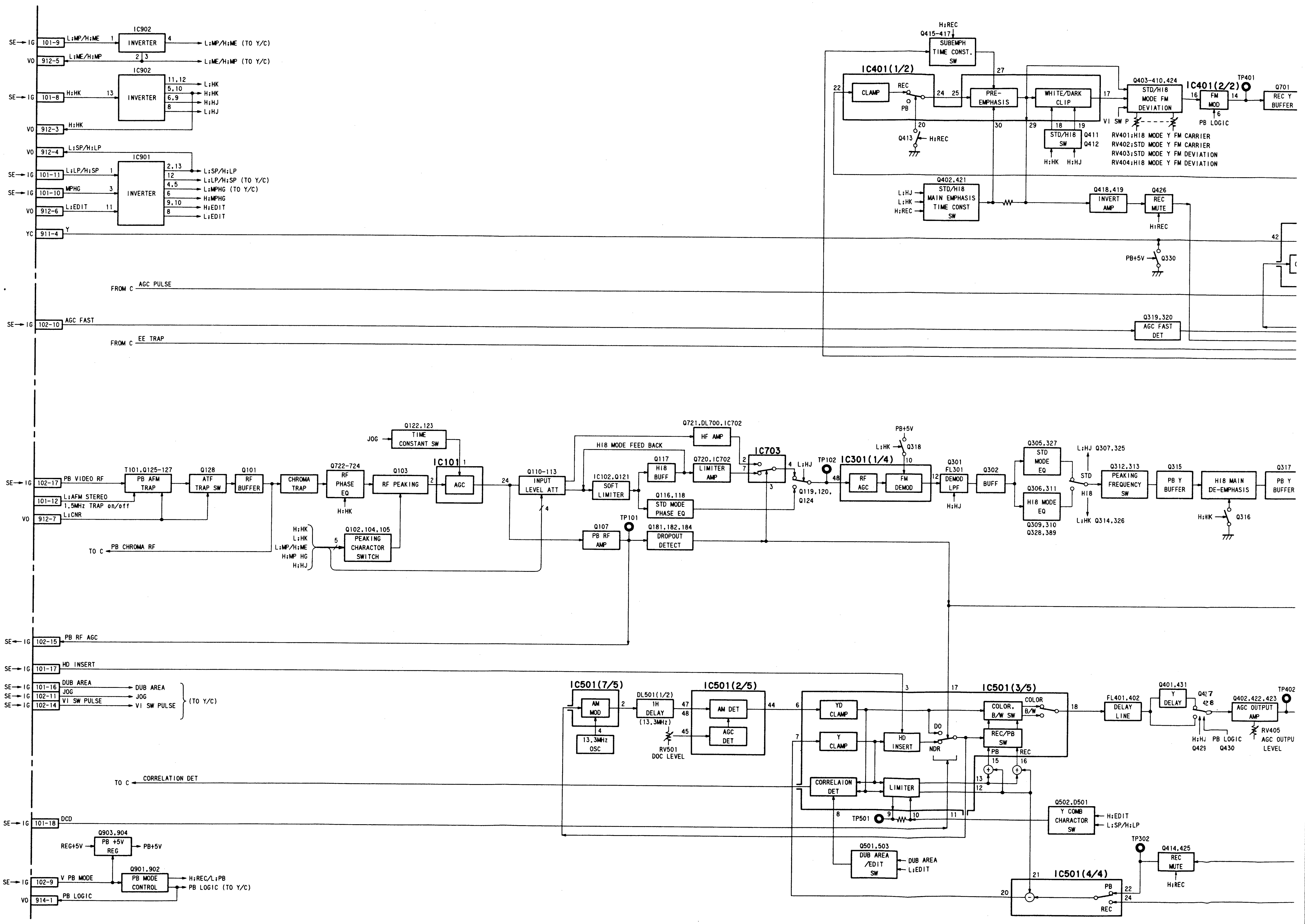
OVERALL (2/2)

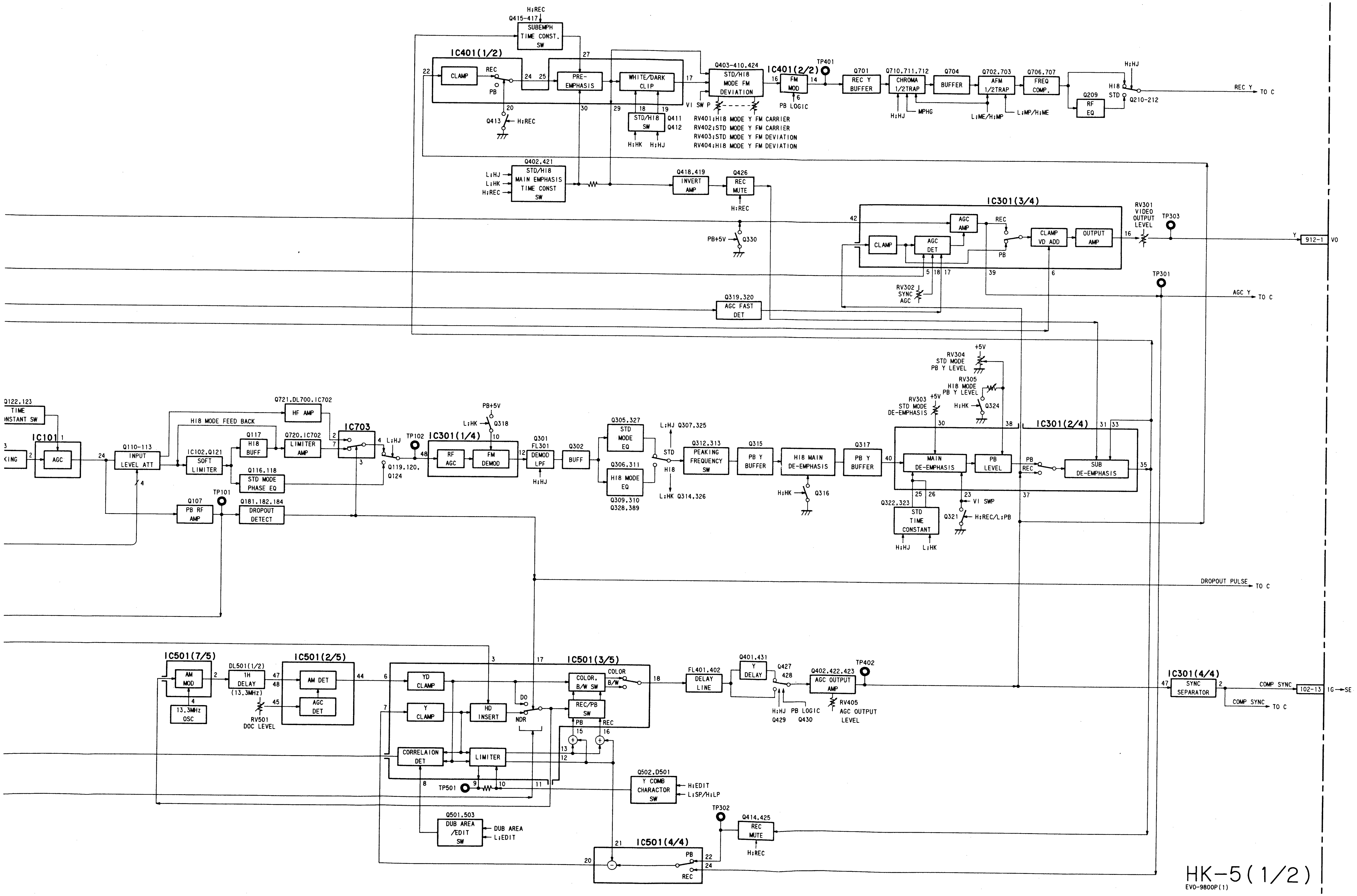

EXT REF V
TO/FROM CORE DECK BLOCK
YS
CS
VIDEO SELECTOR
S-Y
S-C
COMPOSITE VIDEO
YC-46
H:CNR ON
Y
C
CORE FSC
Y (CNR)
CARRIER LEAK CANCEL
Y NOISE CANCEL
Y/C MIX
OUTPUT AMP
CHARACTOR MIX
MONITOR AMP
COMP VIDEO
LINE OUT
CHARA SIG
CHARA BACK
PB SYNC
C (CNR)
PB C
HIGH SPEED ACC
C NOISE CANCEL
S VIDEO OUTPUT AMP
DUB Y U-MATIC HIGH FREQUENCY PRE-EMPHASIS
DUB Y AMP
DUB Y
DUB C
1st FIELD P
LOW BAND TRAP
REF FSC (CNR)
L:SP/H:LOW BAND
PILOT BURST MIX
4.43MHz → 924kHz CONVERTER or 685KHz
DUB C AMP
VO-30
DUB OUT SELECT
SW-347A(2/2)
CN1007 S VIDEO IN
CN1008 S VIDEO OUT
CP-162
CN1004 VIDEO IN
CN1006 VIDEO OUT
CN1003 MONITOR VIDEO
CN1001 MONITOR TV
MONITOR1
MONITOR2
MONITOR OUT
CN1002 MONITOR AUDIO
CN1014 DUB OUT
REF SYNC
CN1005 SYNC IN
CP-141
REMOTE : 9P
RM-83
REMOTE /LOCAL SW
SW-348
Y (CNR)
Y INPUT LEVEL
Y A/D
A/D CONV
Y NOISE REDUCER (NOT USE)
Y FIELD MEMORY
Y ENHANCER (NOT USE)
REF FSC (CNR)
1st FIELD PULSE
D/A CONV
Y D/A
Y DELAY ADJUST
C (CNR)
CHROMA INPUT LEVEL
C A/D
CHROMA NOISE REDUCER
CHROMA FIELD MEMORY
CHROMA ENCODER
C D/A
C DELAY ADJUST
DI-13
Y TIMING VIDEO
WRITE TIMING PULSE GENERATOR
WRITE TIMING CONTROL
BURST INSER CONTROL PULSE GENERATOR
BF 1
BF 2
COMP SYNC
READ TIMING PULSE GENERATOR
READ TIMING CONTROL
CNR SYNC
CNR SERIAL DATA
REF SYNC
EXTERNAL GEN-LOCKER & SYNC SIGNAL GENERATOR
LALT
FIELD PULSE
FIELD&LALT PULSE GENERATOR
PLL
COMP CTL
RF DETECT
RF OK
FG COMP AND TAPE DIR DETECT
TAPE DIRECTION
CAPSTAN FG
SP/LP PEAK DET
CAPSTAN FG A.B
DI-12
TAPE RELEASE
CAPSTAN FG A.B
SP/LP PEAK DET
H:HI BAND
H:CNR ON
COMP CTL
TAPE DIRECTION
TAPE RELEASE
SERCH MUTE
PCM MUTE
AUDIO MUTE
CORE SERIAL DATA
CORE DECK SIELAL DATA CPU
CAPSTAN FG
CTL COUNTER
RF OK
CN105 MICROPHONES
CH-1/2 MIC
MC-28
PCM L.R(REC)
PCM L.R(PB)
STD(REC)
STD(PB)
PCM L-CH
PCM R-CH
STD
OUTPUT SELECT
LIMITER REC AMP
PCM(L)
PCM(R)
CH-1 REC LEVEL
CH-2 REC LEVEL
SW-346(1/2)
CH-1 LINE/MIC SELECT
CH-2 LINE/MIC SELECT
CH-1 AUDIO
CH-1 MIC
CH-2 AUDIO
INPUT LEVEL SELECT
CH-1/L
CH-2/R
CN1007 CH-1/L
CN1008 CH-2/R
AUDIO LEVEL IN
AA-16
STD SELECT A.B
AUDIO LIMITER
PCM L-CH
PCM R-CH
STD
AUDIO MUTE
PCM (L),(R)
STD/PCM MIX PB AMP
MIX
OUTPUT SELECT
CH-1 PB LEVEL
CH-2 PB LEVEL
CH-1/L
CH-2/R
PB OUTPUT AMP
CN1009 CH-1/L
CN1010 CH-2/R
AUDIO LEVEL OUT
AUDIO SELECT A.B
HEADPHONES /MONITOR AMP
CH-1/2
METER DRIVE
MONITOR SELECT
MONITOR OUT
HEADPHONES SELECT
HEADPHONES LEVEL
SW-346(2/2)
HP-42
HEADPHONES
CH-1/2 METER
MT-57
CH-1
CH-2
AUDIO LEVEL
AFM INPUT SELECT
AUDIO LIMITER
OUTPUT SELECT
SW-347A(1/2)
SEARCH MUTE
PCM MUTE
AUDIO MUTE
AU-127
CORE SERIAL DATA
L:POWER ON
DC-45A
REG : 12V
REG +9V
REG +7V
REG +5(A)
REG +5(D)
REG -9V
SYS : 12V
DRIVE +9V
DRIVE +5V
VOLTAGE REGULATOR
L:POWER ON


CN1007 S VIDEO IN
CN1008 S VIDEO OUT
S-Y
S-C
CP-162
H:CNR ON
COMP VIDEO
LINE OUT
CN1004 VIDEO IN
CN1006 VIDEO OUT
CN1003 MONITOR VIDEO
CN1001 MONITOR TV
CARRIER LEAK CANCEL
Y NOISE CANCEL
Y/C MIX
OUTPUT AMP
CHARACTOR MIX
MONITOR AMP
CHARA SIG
CHARA BACK
PB SYNC
MONITOR1
MONITOR2
MONITOR OUT
CN1002 MONITOR AUDIO
C NOISE CANCEL
S VIDEO OUTPUT AMP
HIGH SPEED ACC
DUB Y U-MATIC HIGH FREQUENCY PRE-EMPHASIS
DUB Y AMP
DUB Y
DUB C
1st FIELD P
CN1014 DUB OUT
LOW BAND TRAP
PILOT BURST MIX
4.43MHz → 924kHz CONVERTER or 685KHz
DUB C AMP
REF SYNC
CN1005 SYNC IN
VO-30
CP-141
REF FSC (CNR)
1st FIELD PULSE
A/D CONV
Y NOISE REDUCER (NOT USE)
CHROMA NOISE REDUCER
Y FIELD MEMORY
CHROMA FIELD MEMORY
Y ENHANCER (NOT USE)
CHROMA ENCODER
D/A CONV
Y D/A
C D/A
Y DELAY ADJUST
C DELAY ADJUST
DI-13
VIDEO
WRITE TIMING PULSE GENERATOR
WRITE TIMING CONTROL
READ TIMING PULSE GENERATOR
READ TIMING CONTROL
BURST INSER CONTROL PULSE GENERATOR
BF 1
BF 2
CNR SYNC
CNR SERIAL DATA
FIELD&ALT PULSE GENERATOR
PLL
COMP CTL
RF DETECT
RF OK
FG COMP AND TAPE DIR DETECT
TAPE DIRECTION
CAPSTAN FG
SP/LP PEAK DET
CAPSTAN FG A.B
DI-12
CN105 MICROPHONES
CH-1/2 MIC
MC-28
PCM(L)
PCM(R)
CH-1 REC LEVEL
CH-2 REC LEVEL
SW-346(1/2)
CH-1 LINE/MIC SELECT
CH-2 LINE/MIC SELECT
CH-1 AUDIO
CH-1 MIC
CH-2 AUDIO
INPUT LEVEL SELECT
CH-1/L
CH-2/R
CN1007 CH-1/L
CN1008 CH-2/R
AUDIO LEVEL IN
AA-16
PCM (L),(R)
MIX
STD
OUTPUT SELECT
CH-1 PB LEVEL
CH-2 PB LEVEL
PB OUTPUT AMP
CN1009 CH-1/L
CN1010 CH-2/R
AUDIO LEVEL OUT
HEADPHONES /MONITOR AMP
CH-1/2
METER DRIVE
AU-127
MONITOR SELECT
MONITOR OUT
HEADPHONES SELECT
SW-346(2/2)
HEADPHONES LEVEL
HP-42
HEADPHONES
CH-1/2 METER
MT-57
CH-1
CH-2
AUDIO LEVEL
REMOTE 1 9P
RM-83
REMOTE /LOCAL SW
SW-348
SEARCH DIAL CONTROL
PTC-32
8 BIT FUNCTION MICRO COMPUTOR
DISPLAY DRIVER
DISPLAY
DD-12
DP-101
MATRIX LED'S DRIVER
FUNCTION LED'S
KY-162
LP-52
KEY SERIAL DATA
REMOTE DATA CONTROL
KEY SERIAL DATA CONTROL
H:HI BAND
H:CNR ON
COMP CTL
ROM/RAM
SIO
MODE CONTROLLER
VIDEO CONTROL SIGNALS
AUDIO CONTROL SIGNALS
CS1001 DEW SENSOR
SYSTEM CONTROLLER
PORT EXPANDER
BKU-703A
DATA MEMORY
RF OK
REF
FRAME PULSE GENERATOR
EXT REF V
TAPE DIRECTION
TAPE RELEASE
REF SYNC
PB SYNC
CHARA SIG
CHARA BACK
CHARACTORSE GENERATOR
SERCH MUTE
PCM MUTE
AUDIO MUTE
REF SYNC
C SYNC
CORE SERIAL DATA
CORE DECK SIELAL DATA CPU
CTL CONTROLLER
CNR SYNC
CNR SERIAL DATA
CAPSTAN FG
CTL COUNTER
TIMING CONTROL
RF OK
SY-145A
DC-45A
REG +12V
REG +9V
REG +7V
REG +5V(A)
REG +5V(D)
REG -9V
SYS +12V
DRIVE +9V
DRIVE +5V
VOLTAGE REGULATOR
L:POWER ON
REG+12V
REG+7V
SYS+12V
SW REGULATOR
UR-14E
S1001 POWER SW
AC-89
CN1001 AC IN

OVERALL(2/2)
EVO-9800P(1)

Y PROCESS

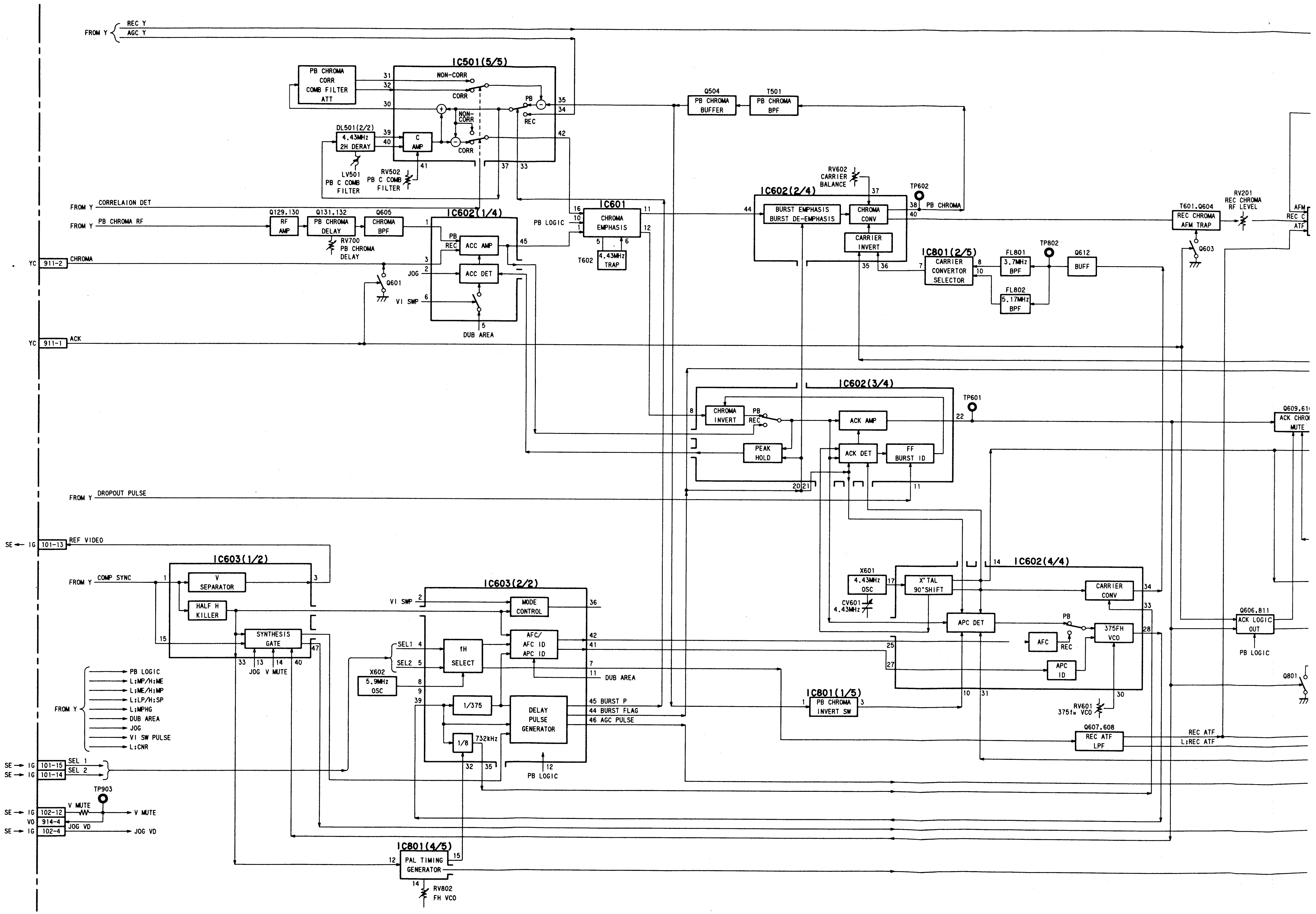

SE→IG 101-9 L:MP/H:ME
IC902
INVERTER
L:MP/H:ME (TO Y/C)
VO 912-5 L:ME/H:MP
L:ME/H:MP (TO Y/C)
SE→IG 101-8 H:HK
L:HK
H:HK
H:HJ
L:HJ
VO 912-3 H:HK
VO 912-4 L:SP/H:LP
IC901
SE→IG 101-11 L:LP/H:SP
SE→IG 101-10 MPHG
VO 912-6 L:EDIT
L:SP/H:LP
L:LP/H:SP (TO Y/C)
L:MPHG (TO Y/C)
H:MPHG
H:EDIT
L:EDIT
YC 911-4 Y
FROM C AGC PULSE
SE→IG 102-10 AGC FAST
FROM C EE TRAP
SE→IG 102-17 PB VIDEO RF
101-12 L:AFM STEREO
1.5MHz TRAP on/off
VO 912-7 L:CNR
T101,Q125-127
PB AFM TRAP
Q128
ATF TRAP SW
Q101
RF BUFFER
CHROMA TRAP
Q722-724
RF PHASE EQ
H:HK
Q103
RF PEAKING
Q122,123
TIME CONSTANT SW
JOG
IC101
AGC
Q110-113
INPUT LEVEL ATT
TO C PB CHROMA RF
H:HK
L:HK
L:MP/H:ME
H:MP HG
H:HJ
Q102,104,105
PEAKING CHARACTOR SWITCH
H18 MODE FEED BACK
IC102,Q121
SOFT LIMITER
Q117
H18 BUFF
Q721,DL700,IC702
HF AMP
Q720,IC702
LIMITER AMP
Q116,118
STD MODE PHASE EQ
IC703
L:HJ
Q119,120,Q124
TP101
Q107
PB RF AMP
Q181,182,184
DROPOUT DETECT
TP102
PB+5V
L:HK
Q318
IC301(1/4)
RF AGC
FM DEMOD
Q301
FL301
DEMOD LPF
H:HJ
Q302
BUFF
Q305,327
STD MODE EQ
Q306,311
H18 MODE EQ
Q309,310
Q328,389
L:HJ Q307,325
STD
H18
L:HK Q314,326
Q312,313
PEAKING FREQUENCY SW
Q315
PB Y BUFFER
H18 MAIN DE-EMPHASIS
H:HK
Q316
Q317
PB Y BUFFER
H:REC
Q415-417
SUBEMPH TIME CONST. SW
IC401(1/2)
CLAMP
REC
PB
Q413
H:REC
PRE-EMPHASIS
WHITE/DARK CLIP
STD/H18 SW
Q411
Q412
H:HK
H:HJ
Q403-410,424
STD/H18 MODE FM DEVIATION
VI SW P
IC401(2/2)
FM MOD
PB LOGIC
TP401
Q701
REC Y BUFFER
RV401:H18 MODE Y FM CARRIER
RV402:STD MODE Y FM CARRIER
RV403:STD MODE Y FM DEVIATION
RV404:H18 MODE Y FM DEVIATION
Q402,421
STD/H18 MAIN EMPHASIS TIME CONST SW
L:HJ
L:HK
H:REC
Q418,419
INVERT AMP
Q426
REC MUTE
H:REC
PB+5V
Q330
Q319,320
AGC FAST DET
SE→IG 102-15 PB RF AGC
SE→IG 101-17 HD INSERT
SE→IG 101-16 DUB AREA
SE→IG 102-11 JOG
SE→IG 102-14 VI SW PULSE
DUB AREA
JOG
VI SW PULSE
(TO Y/C)
TO C CORRELATION DET
SE→IG 101-18 DCD
Q903,904
PB +5V REG
REG+5V
PB+5V
SE→IG 102-9 V PB MODE
Q901,902
PB MODE CONTROL
H:REC/L:PB
PB LOGIC (TO Y/C)
VO 914-1 PB LOGIC
IC501(7/5)
AM MOD
13.3MHz OSC
DL501(1/2)
1H DELAY
(13.3MHz)
RV501
DOC LEVEL
IC501(2/5)
AM DET
AGC DET
YD CLAMP
Y CLAMP
HD INSERT
DO
NDR
CORRELAION DET
LIMITER
TP501
IC501(3/5)
COLOR, B/W SW
COLOR
B/W
REC/PB SW
PB
REC
Q502,D501
Y COMB CHARACTOR SW
H:EDIT
L:SP/H:LP
Q501,503
DUB AREA /EDIT SW
DUB AREA
L:EDIT
IC501(4/4)
PB
REC
TP302
Q414,425
REC MUTE
H:REC
FL401,402
DELAY LINE
Q401,431
Y DELAY
Q427
428
H:HJ
PB LOGIC
Q429
Q430
Q402,422,423
AGC OUTPUT AMP
RV405
AGC OUTPUT LEVEL
TP402

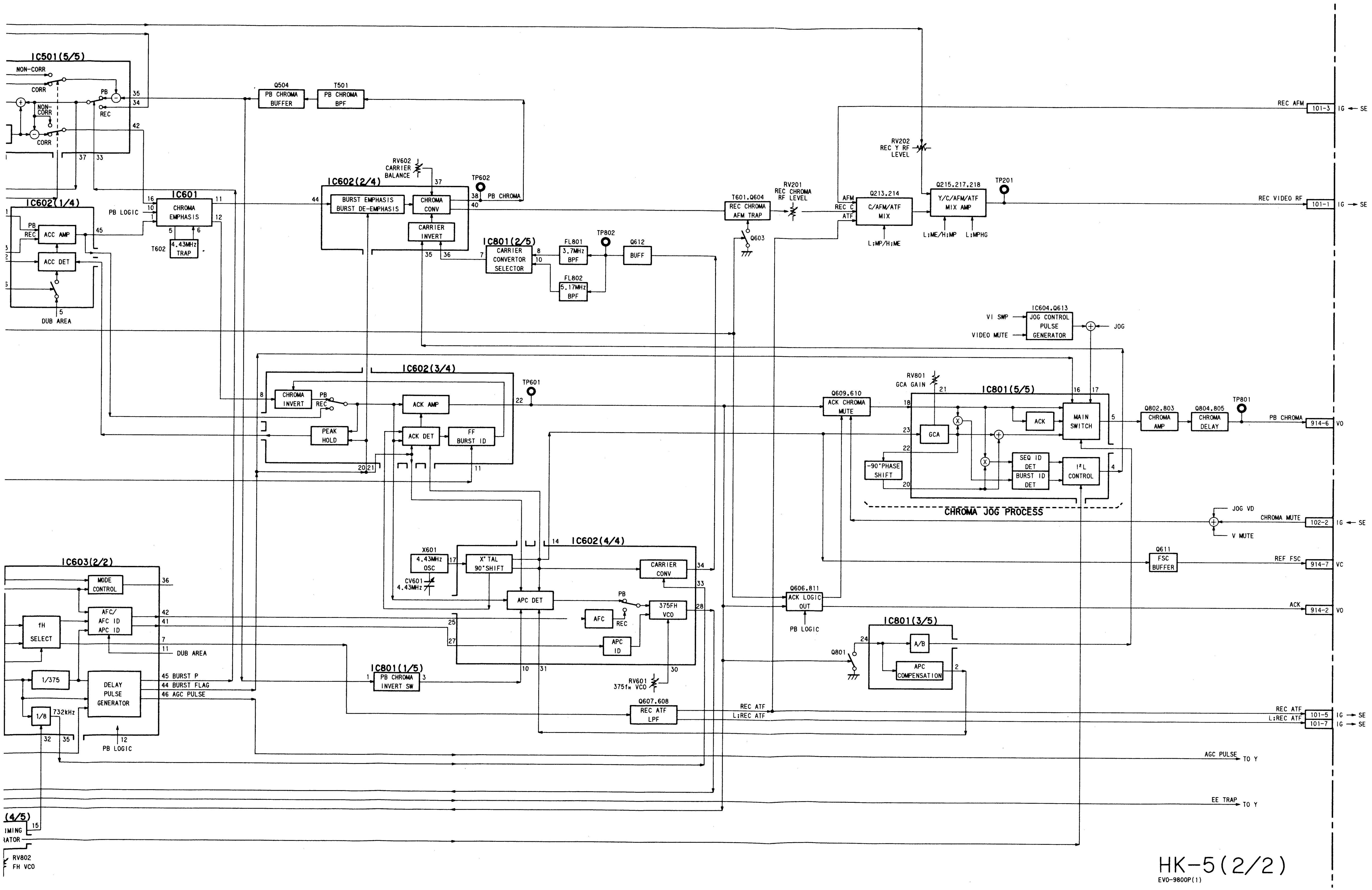

H;REC
Q415-417
SUBEMPH TIME CONST. SW
IC401(1/2)
22
CLAMP
REC
PB
24
25
27
PRE-EMPHASIS
WHITE/DARK CLIP
17
20
Q413
H;REC
30
29
18
19
STD/H18 SW
Q411
Q412
H;HK
H;HJ
Q403-410,424
STD/H18 MODE FM DEVIATION
VI SW P
RV401;H18 MODE Y FM CARRIER
RV402;STD MODE Y FM CARRIER
RV403;STD MODE Y FM DEVIATION
RV404;H18 MODE Y FM DEVIATION
IC401(2/2)
16
FM MOD
14
6
PB LOGIC
TP401
Q701
REC Y BUFFER
Q710,711,712
CHROMA 1/2TRAP
H;HJ
MPHG
Q704
BUFFER
Q702,703
AFM 1/2TRAP
L;ME/H;MP
L;MP/H;ME
Q706,707
FREQ COMP.
Q209
RF EQ
H;HJ
H18
STD
Q210-212
REC Y
TO C
Q402,421
STD/H18 MAIN EMPHASIS TIME CONST SW
L;HJ
L;HK
H;REC
Q418,419
INVERT AMP
Q426
REC MUTE
H:REC
PB+5V
Q330
IC301(3/4)
42
CLAMP
AGC DET
AGC AMP
REC
PB
CLAMP VD ADD
OUTPUT AMP
16
5
18
17
39
6
RV302 SYNC AGC
RV301 VIDEO OUTPUT LEVEL
TP303
Y
912-1
VO
TP301
AGC Y
TO C
Q319,320
AGC FAST DET
Q122,123
TIME
NSTANT SW
3
KING
2
IC101
1
AGC
24
Q110-113
INPUT LEVEL ATT
4
Q721,DL700,IC702
HF AMP
H18 MODE FEED BACK
IC102,Q121
SOFT LIMITER
Q117
H18 BUFF
Q720,IC702
LIMITER AMP
Q116,118
STD MODE PHASE EQ
IC703
2
7
4
3
L;HJ
Q119,120,
Q124
TP102
48
IC301(1/4)
RF AGC
FM DEMOD
PB+5V
L;HK
Q318
10
12
Q301
FL301
DEMOD LPF
H;HJ
Q302
BUFF
Q305,327
STD MODE EQ
Q306,311
H18 MODE EQ
Q309,310
Q328,389
L;HJ Q307,325
STD
H18
L;HK Q314,326
Q312,313
PEAKING FREQUENCY SW
Q315
PB Y BUFFER
H18 MAIN DE-EMPHASIS
H;HK
Q316
Q317
PB Y BUFFER
40
+5V
RV304 STD MODE PB Y LEVEL
RV305 H18 MODE PB Y LEVEL
RV303 STD MODE DE-EMPHASIS
+5V
H;HK
Q324
30
38
IC301(2/4)
31
33
MAIN DE-EMPHASIS
PB LEVEL
PB
REC
SUB DE-EMPHASIS
35
25
26
23
37
VI SWP
Q322,323
STD TIME CONSTANT
H;HJ
L;HK
Q321
H;REC/L;PB
Q107
PB RF AMP
TP101
Q181,182,184
DROPOUT DETECT
DROPOUT PULSE
TO C
IC501(7/5)
AM MOD
2
4
13.3MHz OSC
DL501(1/2)
1H DELAY
(13.3MHz)
47
48
45
RV501 DOC LEVEL
IC501(2/5)
AM DET
AGC DET
44
6
7
3
17
IC501(3/5)
YD CLAMP
Y CLAMP
HD INSERT
DO
NDR
COLOR, B/W SW
COLOR
B/W
REC/PB SW
PB
REC
15
16
13
12
18
CORRELAION DET
LIMITER
8
9
10
11
TP501
Q502,D501
Y COMB CHARACTOR SW
H;EDIT
L;SP/H;LP
Q501,503
DUB AREA /EDIT SW
DUB AREA
L;EDIT
FL401,402
DELAY LINE
Q401,431
Y DELAY
Q427
428
H;HJ
Q429
PB LOGIC
Q430
Q402,422,423
AGC OUTPUT AMP
RV405 AGC OUTPUT LEVEL
TP402
IC301(4/4)
47
SYNC SEPARATOR
2
COMP SYNC
102-13
1G
SE
COMP SYNC
TO C
TP302
Q414,425
REC MUTE
H;REC
IC501(4/4)
21
20
PB
REC
22
24

HK-5(1/2)

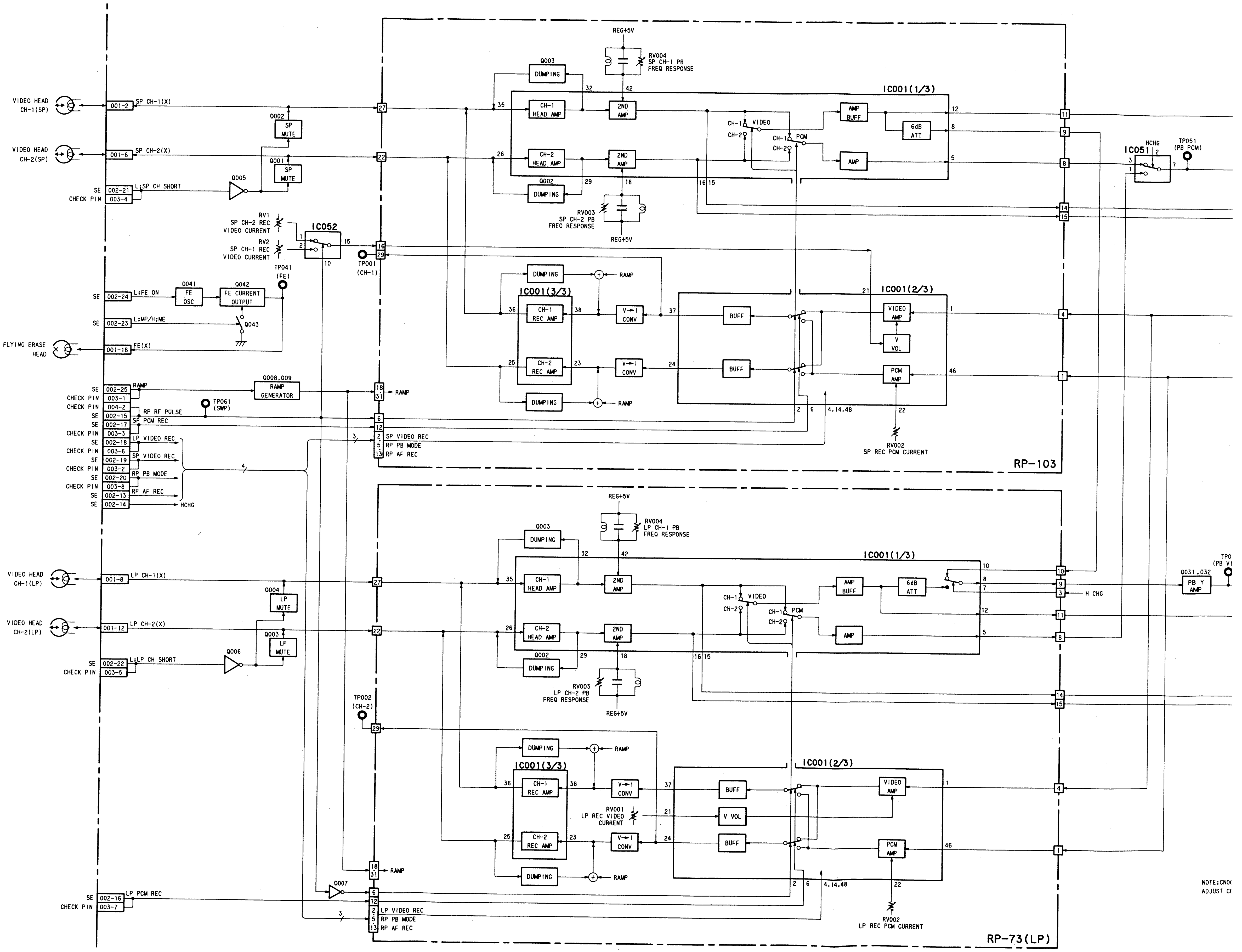
EVO-9800P(1)

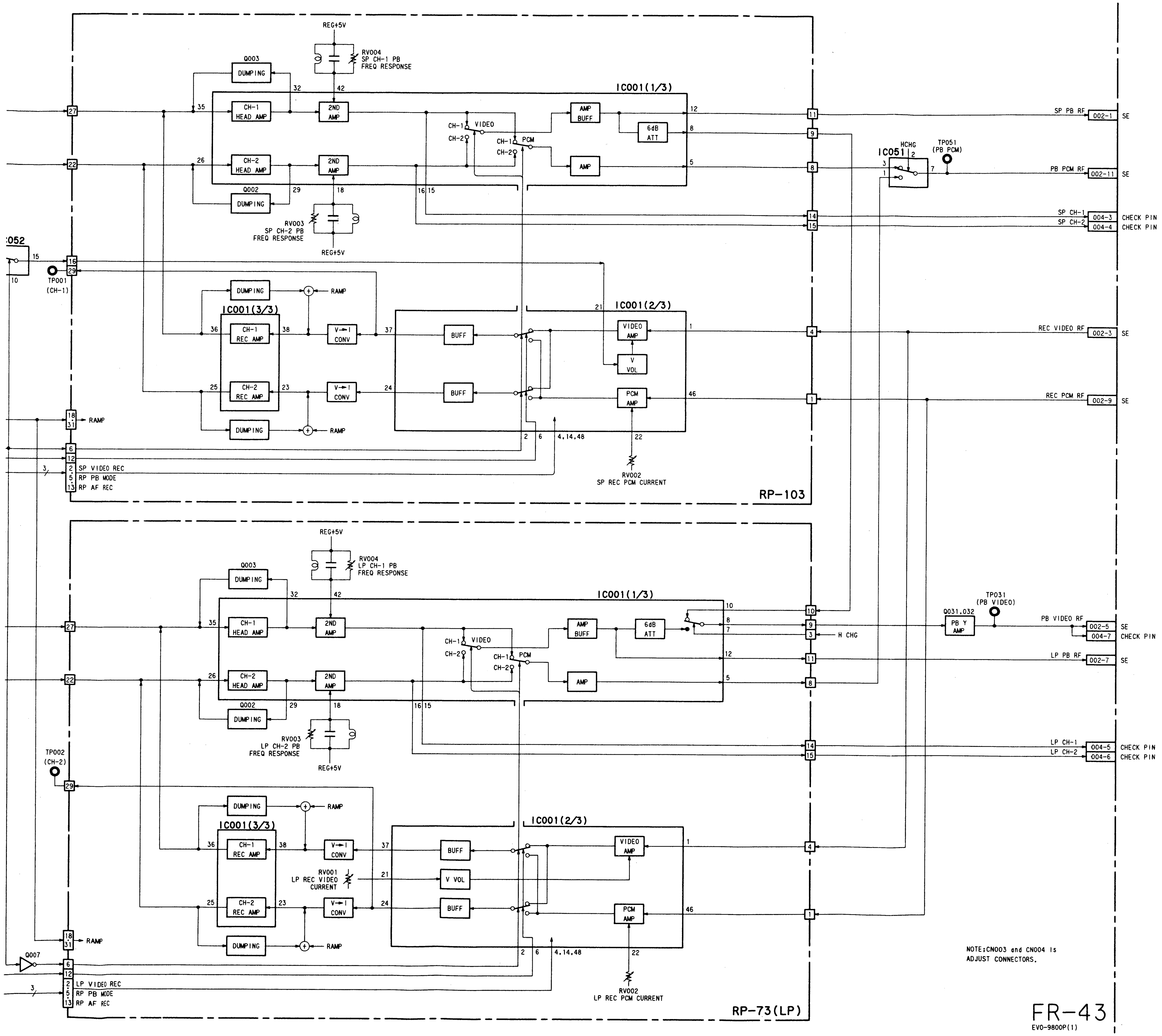
CHROMA PROCESS


FROM Y
REC Y
AGC Y
IC501(5/5)
PB CHROMA CORR COMB FILTER ATT
NON-CORR
CORR
PB
REC
DL501(2/2) 4.43MHz 2H DERAY
C AMP
LV501 PB C COMB FILTER
RV502 PB C COMB FILTER
Q504 PB CHROMA BUFFER
T501 PB CHROMA BPF
RV602 CARRIER BALANCE
IC602(2/4)
BURST EMPHASIS BURST DE-EMPHASIS
CHROMA CONV
CARRIER INVERT
TP602
PB CHROMA
IC801(2/5)
CARRIER CONVERTOR SELECTOR
FL801 3.7MHz BPF
FL802 5.17MHz BPF
TP802
Q612 BUFF
RV201 REC CHROMA RF LEVEL
T601,Q604 REC CHROMA AFM TRAP
Q603
AFM
REC C
ATF
FROM Y CORRELAION DET
FROM Y PB CHROMA RF
Q129,130 RF AMP
Q131,132 PB CHROMA DELAY
RV700 PB CHROMA DELAY
Q605 CHROMA BPF
IC602(1/4)
ACC AMP
ACC DET
JOG
VI SWP
DUB AREA
Q601
IC601
CHROMA EMPHASIS
PB LOGIC
T602 4.43MHz TRAP
YC 911-2 CHROMA
YC 911-1 ACK
IC602(3/4)
CHROMA INVERT
ACK AMP
PEAK HOLD
ACK DET
FF BURST ID
TP601
Q609,610 ACK CHROMA MUTE
FROM Y DROPOUT PULSE
SE ← IG 101-13 REF VIDEO
IC603(1/2)
FROM Y COMP SYNC
V SEPARATOR
HALF H KILLER
SYNTHESIS GATE
JOG V MUTE
IC603(2/2)
MODE CONTROL
AFC/ AFC ID APC ID
SEL1
SEL2
1H SELECT
X602 5.9MHz OSC
1/375
DELAY PULSE GENERATOR
1/8
732kHz
DUB AREA
BURST P
BURST FLAG
AGC PULSE
PB LOGIC
IC602(4/4)
X601 4.43MHz OSC
CV601 4.43MHz
X'TAL 90°SHIFT
CARRIER CONV
APC DET
AFC
APC ID
375FH VCO
RV601 375fH VCO
Q606,611 ACK LOGIC OUT
PB LOGIC
Q801
IC801(1/5)
PB CHROMA INVERT SW
Q607,608 REC ATF LPF
REC ATF
L;REC ATF
FROM Y
PB LOGIC
L;MP/H;ME
L;ME/H;MP
L;LP/H;SP
L;MPHG
DUB AREA
JOG
VI SW PULSE
L;CNR
SE → IG 101-15 SEL 1
SE → IG 101-14 SEL 2
TP903
SE → IG 102-12 V MUTE
VO 914-4
SE → IG 102-4 JOG VD
V MUTE
JOG VD
IC801(4/5)
PAL TIMING GENERATOR
RV802 FH VCO


IC501(5/5)
NON-CORR
CORR
PB
REC
NON-CORR
CORR
35
34
42
37
33
IC602(1/4)
PB
REC
ACC AMP
ACC DET
DUB AREA
5
45
IC601
CHROMA EMPHASIS
PB LOGIC
16
10
1
11
12
5
6
T602
4.43MHz TRAP
Q504
PB CHROMA BUFFER
T501
PB CHROMA BPF
RV602
CARRIER BALANCE
IC602(2/4)
BURST EMPHASIS
BURST DE-EMPHASIS
CHROMA CONV
CARRIER INVERT
44
37
38
40
35
36
TP602
PB CHROMA
IC801(2/5)
CARRIER CONVERTOR SELECTOR
7
8
10
FL801
3.7MHz BPF
FL802
5.17MHz BPF
TP802
Q612
BUFF
T601,Q604
REC CHROMA AFM TRAP
Q603
RV201
REC CHROMA RF LEVEL
AFM
REC C
ATF
Q213,214
C/AFM/ATF MIX
L:MP/H:ME
RV202
REC Y RF LEVEL
Q215,217,218
Y/C/AFM/ATF MIX AMP
L:ME/H:MP
L:MPHG
TP201
REC AFM
101-3
IG ← SE
REC VIDEO RF
101-1
IG ← SE
IC604,Q613
VI SWP
VIDEO MUTE
JOG CONTROL PULSE GENERATOR
JOG
IC602(3/4)
CHROMA INVERT
PB
REC
ACK AMP
PEAK HOLD
ACK DET
FF BURST ID
8
22
20
21
11
TP601
Q609,610
ACK CHROMA MUTE
RV801
GCA GAIN
21
IC801(5/5)
16
17
18
23
22
20
GCA
-90°PHASE SHIFT
ACK
MAIN SWITCH
SEQ ID DET
BURST ID DET
I²L CONTROL
5
4
CHROMA JOG PROCESS
Q802,803
CHROMA AMP
Q804,805
CHROMA DELAY
TP801
PB CHROMA
914-6
VO
JOG VD
CHROMA MUTE
V MUTE
102-2
IG ← SE
IC603(2/2)
MODE CONTROL
AFC/ AFC ID APC ID
1H SELECT
1/375
DELAY PULSE GENERATOR
1/8
732kHz
36
42
41
7
11
DUB AREA
45 BURST P
44 BURST FLAG
46 AGC PULSE
32
35
12
PB LOGIC
IC602(4/4)
14
X601
4.43MHz OSC
CV601
4.43MHz
17
X'TAL 90°SHIFT
CARRIER CONV
APC DET
AFC
PB
REC
375FH VCO
APC ID
34
33
28
25
27
10
31
30
RV601
375fH VCO
Q606,811
ACK LOGIC OUT
PB LOGIC
Q611
FSC BUFFER
REF FSC
914-7
VC
ACK
914-2
VO
IC801(3/5)
Q801
24
A/B
APC COMPENSATION
2
IC801(1/5)
PB CHROMA INVERT SW
1
3
Q607,608
REC ATF LPF
REC ATF
L:REC ATF
REC ATF
L:REC ATF
101-5
101-7
IG → SE
IG → SE
AGC PULSE
TO Y
EE TRAP
TO Y
(4/5)
15
IMING
RATOR
RV802
FH VCO
HK-5(2/2)
EVO-9800P(1)

REC/PB HEAD AMP

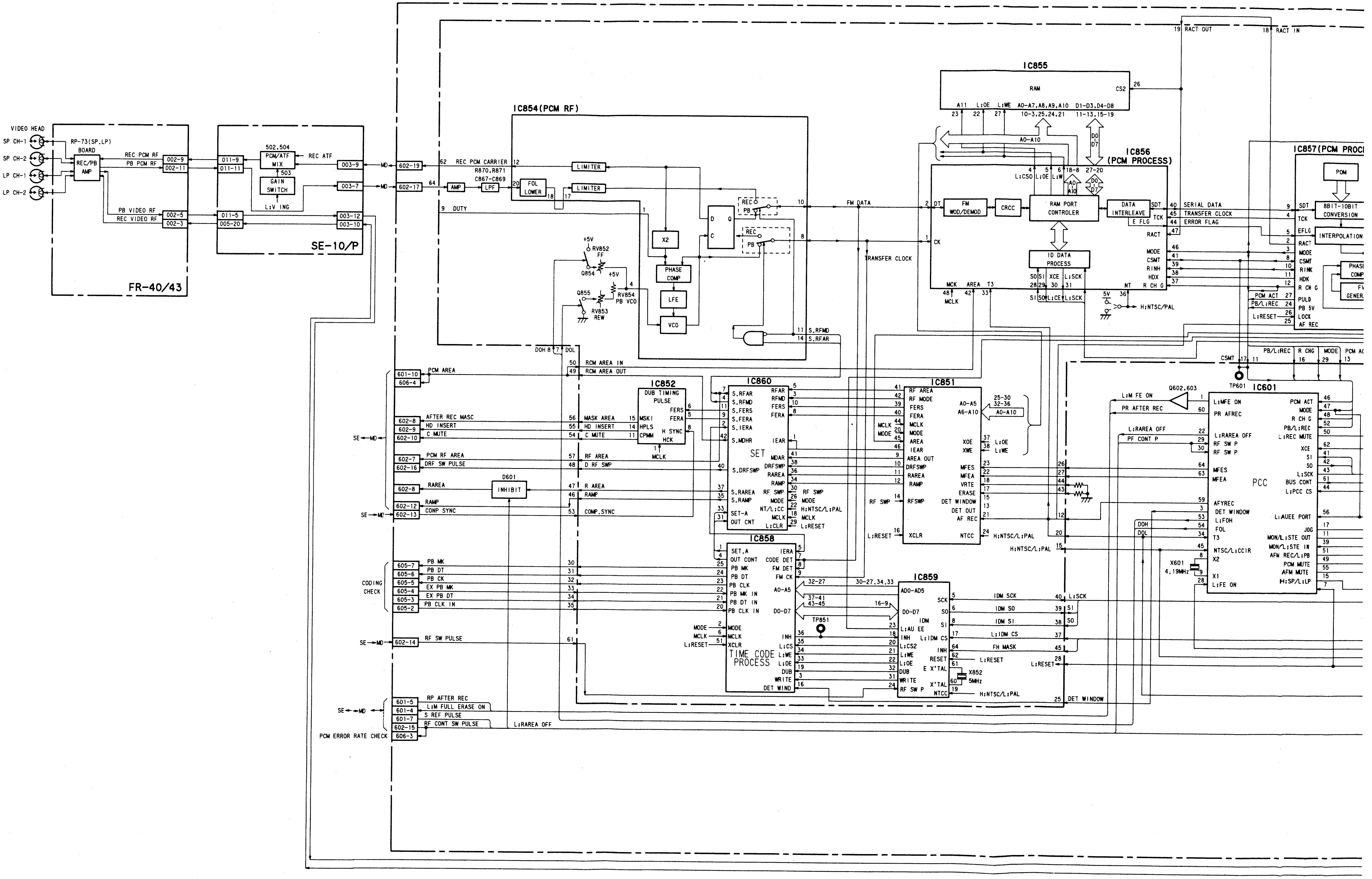

VIDEO HEAD CH-1(SP)
VIDEO HEAD CH-2(SP)
001-2 SP CH-1(X)
001-6 SP CH-2(X)
SE CHECK PIN 002-21 003-4 L:SP CH SHORT
Q002 SP MUTE
Q001 SP MUTE
Q005
RV1 SP CH-2 REC VIDEO CURRENT
RV2 SP CH-1 REC VIDEO CURRENT
IC052
TP001 (CH-1)
TP041 (FE)
SE 002-24 L:FE ON
Q041 FE OSC
Q042 FE CURRENT OUTPUT
SE 002-23 L:MP/H:ME
Q043
FLYING ERASE HEAD
001-18 FE(X)
SE CHECK PIN 002-25 003-1 RAMP
CHECK PIN 004-2 RP RF PULSE
SE 002-15 SP PCM REC
SE 002-17
CHECK PIN 003-3
SE 002-18 LP VIDEO REC
CHECK PIN 003-6
SE 002-19 SP VIDEO REC
CHECK PIN 003-2
SE 002-20 RP PB MODE
CHECK PIN 003-8
SE 002-13 RP AF REC
SE 002-14 HCHG
TP061 (SWP)
Q008,009 RAMP GENERATOR
RAMP
SP VIDEO REC
RP PB MODE
RP AF REC
Q003 DUMPING
Q002 DUMPING
REG+5V
RV004 SP CH-1 PB FREQ RESPONSE
RV003 SP CH-2 PB FREQ RESPONSE
IC001(1/3)
CH-1 HEAD AMP
CH-2 HEAD AMP
2ND AMP
VIDEO
PCM
AMP BUFF
6dB ATT
AMP
IC001(3/3)
CH-1 REC AMP
CH-2 REC AMP
V→I CONV
DUMPING
IC001(2/3)
BUFF
VIDEO AMP
V VOL
PCM AMP
RV002 SP REC PCM CURRENT
RP-103
IC051
HCHG
TP051 (PB PCM)
VIDEO HEAD CH-1(LP)
VIDEO HEAD CH-2(LP)
001-8 LP CH-1(X)
001-12 LP CH-2(X)
Q004 LP MUTE
Q003 LP MUTE
Q006
SE CHECK PIN 002-22 003-5 L:LP CH SHORT
RV004 LP CH-1 PB FREQ RESPONSE
RV003 LP CH-2 PB FREQ RESPONSE
H CHG
Q031,032 PB Y AMP
TP002 (CH-2)
RV001 LP REC VIDEO CURRENT
Q007
SE CHECK PIN 002-16 003-7 LP PCM REC
LP VIDEO REC
RV002 LP REC PCM CURRENT
RP-73(LP)
NOTE:CNO
ADJUST C

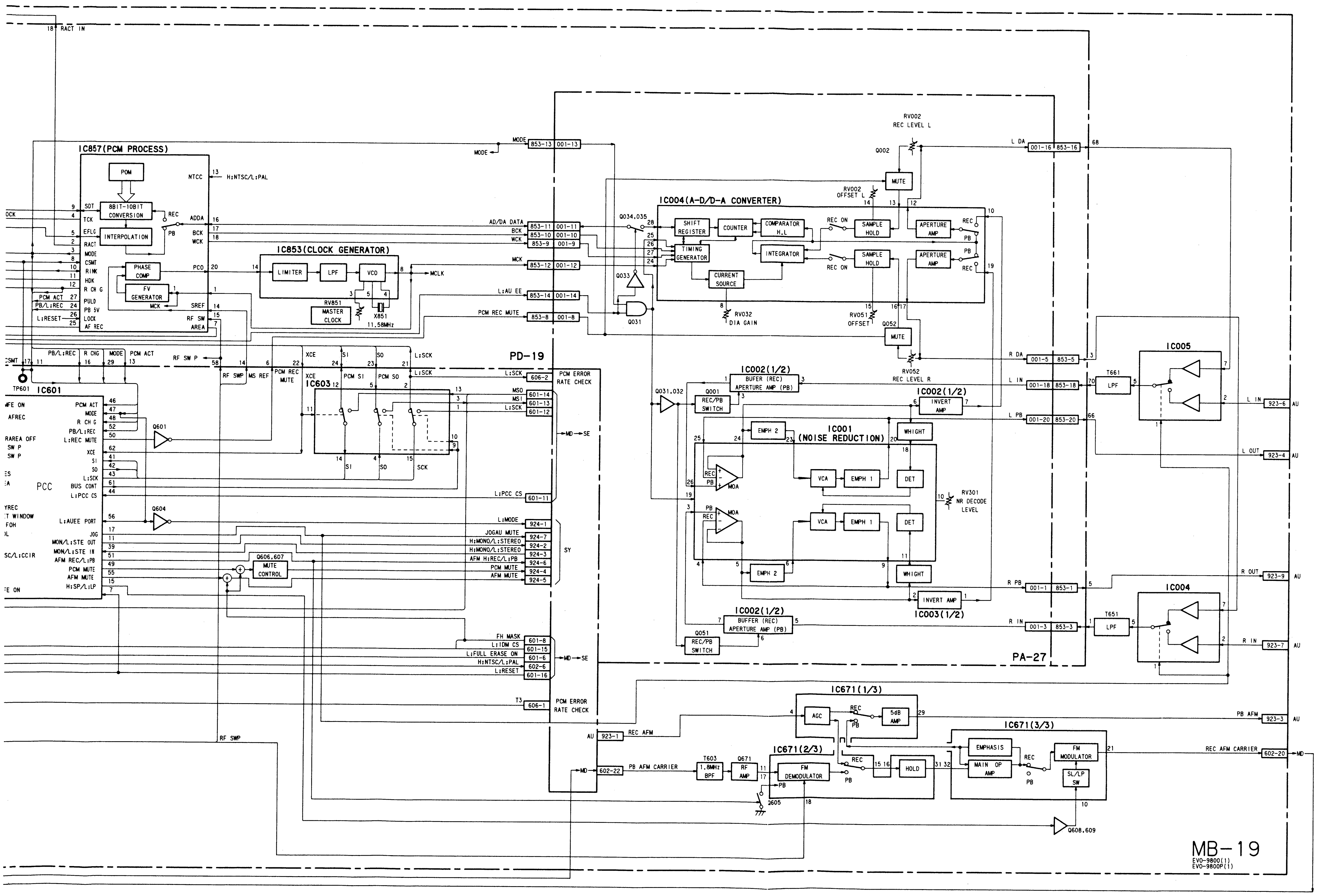

REG+5V
RV004 SP CH-1 PB FREQ RESPONSE
Q003
DUMPING
IC001(1/3)
CH-1 HEAD AMP
2ND AMP
CH-2 HEAD AMP
CH-1 VIDEO
CH-2
CH-1 PCM
AMP BUFF
6dB ATT
AMP
Q002
RV003 SP CH-2 PB FREQ RESPONSE
:052
TP001 (CH-1)
RAMP
IC001(3/3)
CH-1 REC AMP
CH-2 REC AMP
V→I CONV
IC001(2/3)
BUFF
VIDEO AMP
V VOL
PCM AMP
4.14.48
RV002 SP REC PCM CURRENT
SP VIDEO REC
RP PB MODE
RP AF REC
RP-103
HCHG
IC051
TP051 (PB PCM)
SP PB RF
PB PCM RF
SP CH-1
SP CH-2
REC VIDEO RF
REC PCM RF
002-1
002-11
004-3
004-4
002-3
002-9
SE
CHECK PIN
RV004 LP CH-1 PB FREQ RESPONSE
RV003 LP CH-2 PB FREQ RESPONSE
TP002 (CH-2)
RV001 LP REC VIDEO CURRENT
RV002 LP REC PCM CURRENT
Q007
LP VIDEO REC
H CHG
Q031,032
PB Y AMP
TP031 (PB VIDEO)
PB VIDEO RF
LP PB RF
LP CH-1
LP CH-2
002-5
004-7
002-7
004-5
004-6
RP-73(LP)

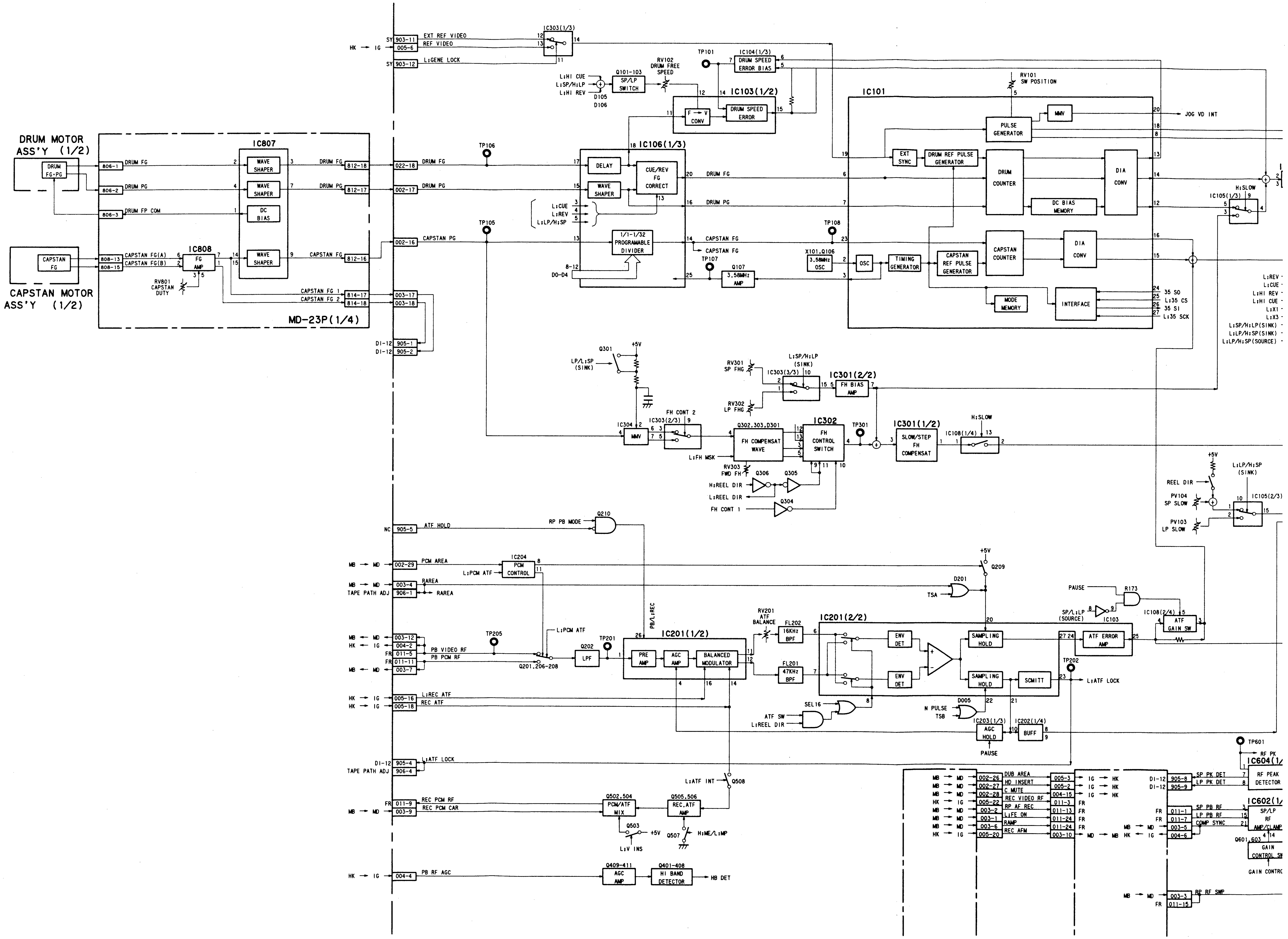
NOTE:CN003 and CN004 is ADJUST CONNECTORS.

FR-43
EVO-9800P(1)

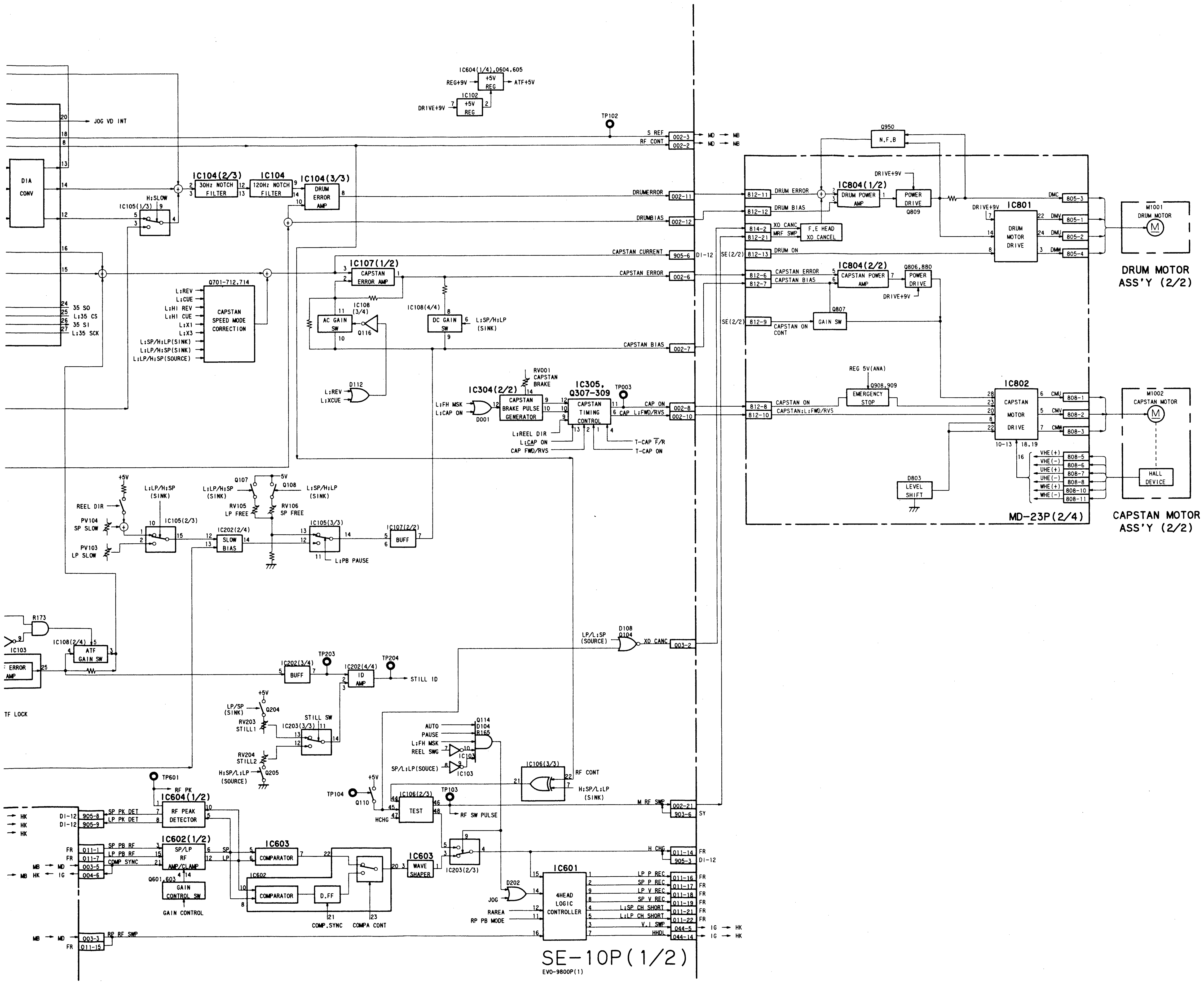
PCM AUDIO


VIDEO HEAD
SP CH-1
SP CH-2
LP CH-1
LP CH-2
RP-73(SP,LP) BOARD
REC/PB AMP
REC PCM RF
PB PCM RF
PB VIDEO RF
REC VIDEO RF
FR-40/43
502,504 PCM/ATF MIX
503 GAIN SWITCH
REC ATF
L:V ING
SE-10/P
IC854(PCM RF)
REC PCM CARRIER
R870,R871
C867-C869
AMP
LPF
FOL LOWER
LIMITER
DUTY
X2
PHASE COMP
LFE
VCO
RV852 FF
RV853 REW
RV854 PB VCO
Q854
Q855
S.RFMD
S.RFAR
FM DATA
TRANSFER CLOCK
IC855
RAM
IC856 (PCM PROCESS)
FM MOD/DEMOD
CRCC
RAM PORT CONTROLER
DATA INTERLEAVE
ID DATA PROCESS
SERIAL DATA
TRANSFER CLOCK
ERROR FLAG
RACT OUT
RACT IN
IC857(PCM PROC
PCM
8BIT-10BIT CONVERSION
INTERPOLATION
H:NTSC/PAL
IC852 DUB TIMING PULSE
IC860 SET
IC851
IC858 TIME CODE PROCESS
IC859
IC601 PCC
D601 INHIBIT
Q602,603
X601 4.19MHz
X852 5MHz
TP601
TP851
PCM AREA
AFTER REC MASC
HD INSERT
C MUTE
PCM RF AREA
DRF SW PULSE
RAREA
RAMP
COMP SYNC
PB MK
PB DT
PB CK
EX PB MK
EX PB DT
PB CLK IN
CODING CHECK
RF SW PULSE
RP AFTER REC
L:M FULL ERASE ON
S REF PULSE
RF CONT SW PULSE
L:RAREA OFF
PCM ERROR RATE CHECK
IDM SCK
IDM SO
IDM SI
L:IDM CS
FH MASK
L:RESET
DET WINDOW
SE→MD

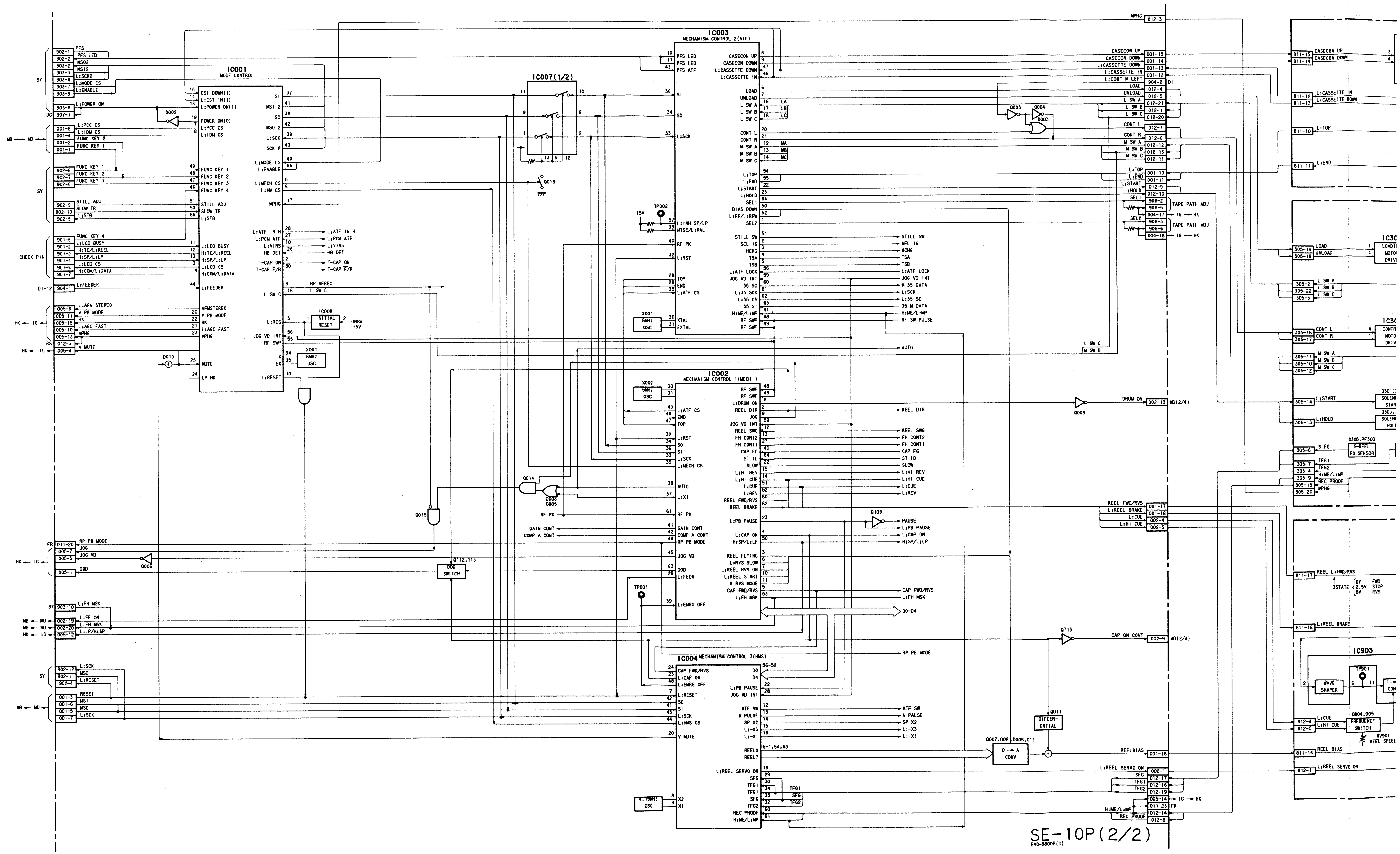

IC857(PCM PROCESS)
POM
8BIT-10BIT CONVERSION
INTERPOLATION
PHASE COMP
FV GENERATOR
IC853(CLOCK GENERATOR)
LIMITER
LPF
VCO
MASTER CLOCK
X851 11.58MHz
IC004(A-D/D-A CONVERTER)
SHIFT REGISTER
COUNTER
COMPARATOR H.L
TIMING GENERATOR
INTEGRATOR
CURRENT SOURCE
SAMPLE HOLD
APERTURE AMP
MUTE
RV002 REC LEVEL L
RV002 OFFSET L
RV032 DIA GAIN
RV051 OFFSET
RV052 REC LEVEL R
IC002(1/2) BUFER (REC) APERTURE AMP (PB)
IC002(1/2) INVERT AMP
IC001 (NOISE REDUCTION)
EMPH 2
WHIGHT
VCA
EMPH 1
DET
RV301 NR DECODE LEVEL
IC003(1/2) INVERT AMP
IC002(1/2) BUFFER (REC) APERTURE AMP (PB)
REC/PB SWITCH
IC005
IC004
T661 LPF
T651 LPF
PA-27
PD-19
IC603
IC601
PCC
Q601
Q604
Q606,607 MUTE CONTROL
PCM ERROR RATE CHECK
IC671(1/3)
AGC
5dB AMP
IC671(2/3)
FM DEMODULATOR
HOLD
IC671(3/3)
EMPHASIS
MAIN OP AMP
FM MODULATOR
SL/LP SW
T603 1.8MHz BPF
Q671 RF AMP
Q605
Q608,609
REC AFM
PB AFM CARRIER
PB AFM
REC AFM CARRIER
L IN
L OUT
R OUT
R IN
AU
MD
SE
SY
TP601
MB-19
EVO-9800(1)
EVO-9800P(1)

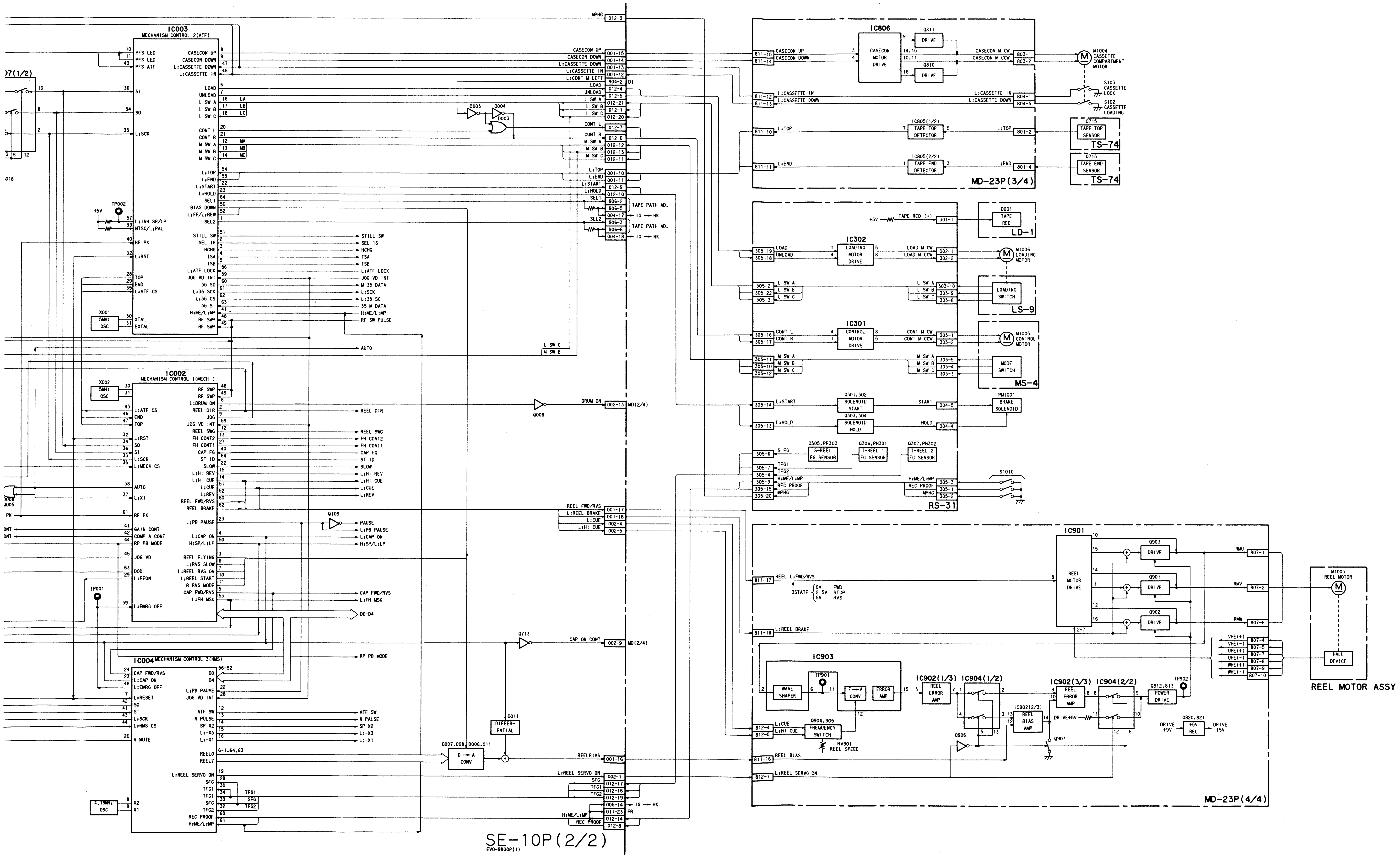


DRUM MOTOR ASS'Y (1/2)
DRUM FG·PG
CAPSTAN MOTOR ASS'Y (1/2)
CAPSTAN FG
IC807
WAVE SHAPER
DC BIAS
IC808
FG AMP
RV801 CAPSTAN DUTY
MD-23P(1/4)
DRUM FG
DRUM PG
DRUM FP COM
CAPSTAN FG(A)
CAPSTAN FG(B)
CAPSTAN FG 1
CAPSTAN FG 2
CAPSTAN PG
EXT REF VIDEO
REF VIDEO
L:GENE LOCK
IC303(1/3)
TP101
IC104(1/3)
DRUM SPEED ERROR BIAS
RV102 DRUM FREE SPEED
Q101-103 SP/LP SWITCH
IC103(1/2)
F→V CONV
DRUM SPEED ERROR
IC106(1/3)
DELAY
WAVE SHAPER
CUE/REV FG CORRECT
1/1-1/32 PROGRAMABLE DIVIDER
TP105
TP106
TP107
TP108
Q107 3.58MHz AMP
X101,Q106 3.58MHz OSC
IC101
RV101 SW POSITION
PULSE GENERATOR
MMV
EXT SYNC
DRUM REF PULSE GENERATOR
DRUM COUNTER
DC BIAS MEMORY
D/A CONV
OSC
TIMING GENERATOR
CAPSTAN REF PULSE GENERATOR
CAPSTAN COUNTER
MODE MEMORY
INTERFACE
JOG VD INT
35 SO
L:35 CS
35 SI
L:35 SCK
H:SLOW
IC105(1/3)
L:REV
L:CUE
L:HI REV
L:HI CUE
L:X1
L:X3
L:SP/H:LP(SINK)
L:LP/H:SP(SINK)
L:LP/H:SP(SOURCE)
Q301
LP/L:SP (SINK)
RV301 SP FHG
RV302 LP FHG
IC303(3/3)
L:SP/H:LP (SINK)
IC301(2/2)
FH BIAS AMP
FH CONT 2
IC303(2/3)
IC304
MMV
Q302,303,D301
FH COMPENSAT WAVE
IC302
FH CONTROL SWITCH
TP301
IC301(1/2)
SLOW/STEP FH COMPENSAT
IC108(1/4)
L:FH MSK
RV303 FWD FH
Q306
Q305
Q304
H:REEL DIR
L:REEL DIR
FH CONT 1
REEL DIR
PV104 SP SLOW
PV103 LP SLOW
L:LP/H:SP (SINK)
IC105(2/3)
ATF HOLD
RP PB MODE
Q210
PCM AREA
IC204 PCM CONTROL
L:PCM ATF
RAREA
TAPE PATH ADJ
Q209
D201
TSA
PAUSE
R173
SP/L:LP (SOURCE)
IC103
IC108(2/4)
ATF GAIN SW
ATF ERROR AMP
TP205
TP201
PB VIDEO RF
PB PCM RF
Q201,206-208
Q202 LPF
PB/L:REC
IC201(1/2)
PRE AMP
AGC AMP
BALANCED MODULATOR
RV201 ATF BALANCE
FL202 16KHz BPF
FL201 47KHz BPF
IC201(2/2)
ENV DET
SAMPLING HOLD
SCMITT
TP202
L:ATF LOCK
L:REC ATF
REC ATF
SEL16
ATF SW
L:REEL DIR
N PULSE
TSB
D005
IC203(1/3) AGC HOLD
IC202(1/4) BUFF
TP601
RF PK
IC604
RF PEAK DETECTOR
L:ATF INT
Q508
REC PCM RF
REC PCM CAR
Q502,504 PCM/ATF MIX
Q505,506 REC.ATF AMP
Q503
L:V INS
Q507
H:ME/L:MP
PB RF AGC
Q409-411 AGC AMP
Q401-408 HI BAND DETECTOR
HB DET
DUB AREA
HD INSERT
C MUTE
REC VIDEO RF
RP AF REC
L:FE ON
RAMP
REC AFM
SP PK DET
LP PK DET
SP PB RF
LP PB RF
COMP SYNC
IC602
SP/LP RF AMP/CLAMP
Q601,603
GAIN CONTROL SW
GAIN CONTROL
RP RF SWP

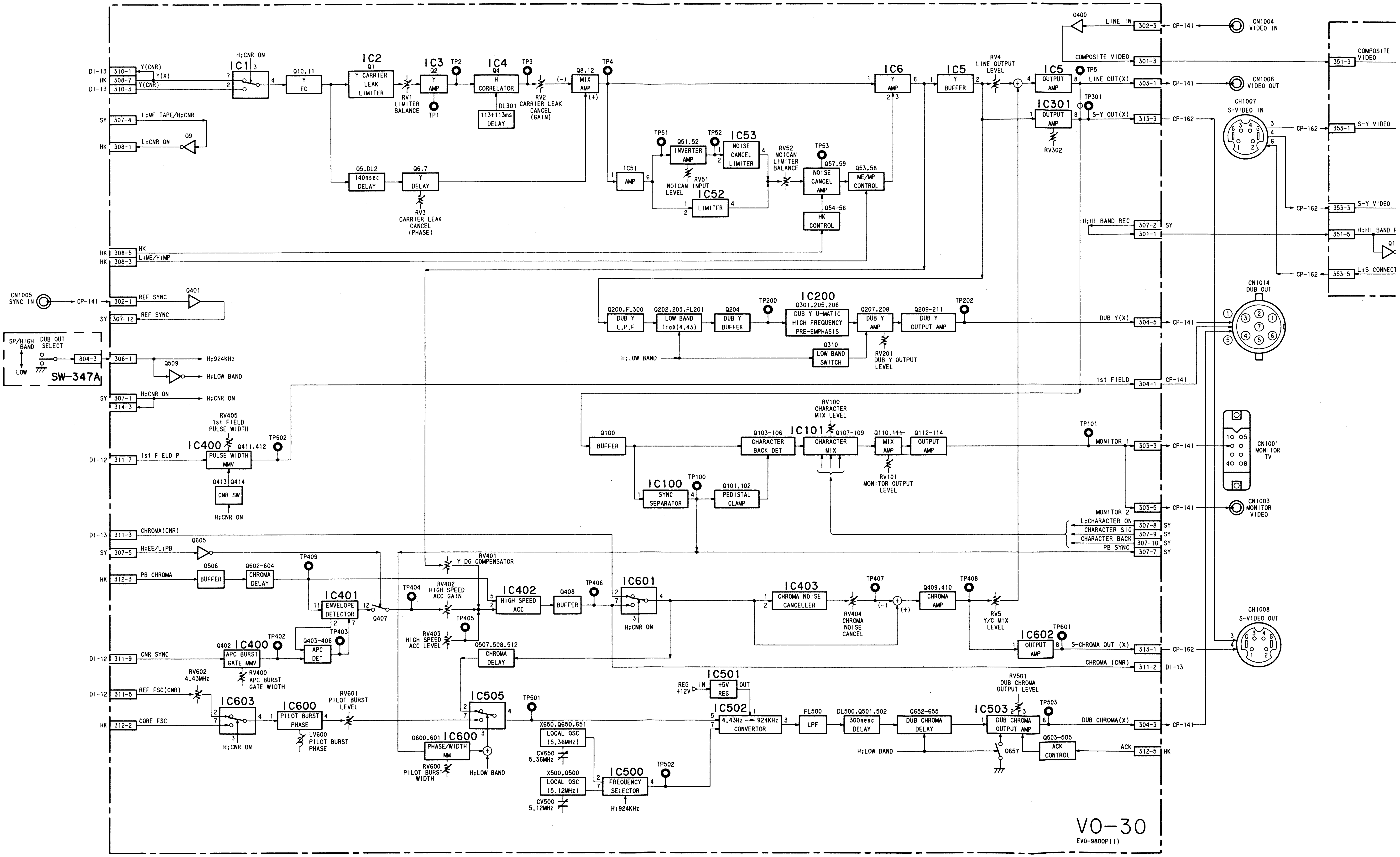

IC604(1/4),Q604,605
+5V REG
REG+9V
ATF+5V
IC102
DRIVE+9V
JOG VD INT
TP102
S REF
RF CONT
002-3
002-2
MD → MB
D/A CONV
IC104(2/3)
30Hz NOTCH FILTER
IC104
120Hz NOTCH FILTER
IC104(3/3)
DRUM ERROR AMP
H:SLOW
IC105(1/3)
DRUMERROR
002-11
DRUMBIAS
002-12
CAPSTAN CURRENT
905-6
DI-12
CAPSTAN ERROR
002-6
IC107(1/2)
CAPSTAN ERROR AMP
Q701-712,714
CAPSTAN SPEED MODE CORRECTION
L:REV
L:CUE
L:HI REV
L:HI CUE
L:X1
L:X3
L:SP/H:LP(SINK)
L:LP/H:SP(SINK)
L:LP/H:SP(SOURCE)
35 SO
L:35 CS
35 SI
L:35 SCK
IC108 (3/4)
AC GAIN SW
Q116
IC108(4/4)
DC GAIN SW
L:SP/H:LP (SINK)
CAPSTAN BIAS
002-7
D112
L:REV
L:XCUE
RV001 CAPSTAN BRAKE
IC304(2/2)
L:FH MSK
L:CAP ON
D001
CAPSTAN BRAKE PULSE GENERATOR
IC305, Q307-309
CAPSTAN TIMING CONTROL
TP003
CAP ON
CAP L:FWD/RVS
002-8
002-10
L:REEL DIR
L:CAP ON
CAP FWD/RVS
T-CAP F/R
T-CAP ON
+5V
L:LP/H:SP (SINK)
REEL DIR
PV104 SP SLOW
PV103 LP SLOW
IC105(2/3)
Q107
Q108
5V
L:LP/H:SP (SINK)
L:SP/H:LP (SINK)
RV105 LP FREE
RV106 SP FREE
IC202(2/4)
SLOW BIAS
IC105(3/3)
L:PB PAUSE
IC107(2/2)
BUFF
R173
IC108(2/4)
IC103
ATF GAIN SW
ERROR AMP
TF LOCK
LP/L:SP (SOURCE)
D108 D104
XO CANC
003-2
IC202(3/4)
BUFF
TP203
IC202(4/4)
ID AMP
TP204
STILL ID
+5V
LP/SP (SINK)
Q204
RV203 STILL1
STILL SW
IC203(3/3)
RV204 STILL2
H:SP/L:LP (SOURCE)
Q205
AUTO
PAUSE
L:FH MSK
REEL SWG
SP/L:LP(SOUCE)
Q114 D104 R165
IC103
IC106(3/3)
RF CONT
H:SP/L:LP (SINK)
TP601
RF PK
IC604(1/2)
RF PEAK DETECTOR
SP PK DET
LP PK DET
DI-12
905-8
905-9
HK
TP104
Q110
+5V
IC106(2/3)
TEST
TP103
HCHG
RF SW PULSE
M RF SWP
002-21
905-6
SY
IC602(1/2)
SP/LP RF AMP/CLAMP
SP PB RF
LP PB RF
COMP SYNC
011-1
011-7
003-5
004-6
FR
MB
MD
IG
Q601,603
GAIN CONTROL SW
GAIN CONTROL
IC603
COMPARATOR
IC602
COMPARATOR
D.FF
COMP.SYNC
COMPA CONT
IC603
WAVE SHAPER
IC203(2/3)
H CHG
011-14
905-3
DI-12
IC601
4HEAD LOGIC CONTROLLER
D202
JOG
RAREA
RP PB MODE
LP P REC
SP P REC
LP V REC
SP V REC
L:SP CH SHORT
L:LP CH SHORT
V.I SWP
HHDL
011-16
011-17
011-18
011-19
011-21
011-22
044-5
044-14
IG → HK
RP RF SWP
003-3
011-15
SE-10P(1/2)
EVO-9800P(1)
Q950
N.F.B
DRIVE+9V
812-11
DRUM ERROR
812-12
DRUM BIAS
IC804(1/2)
DRUM POWER AMP
POWER DRIVE
Q809
814-2
812-21
XO CANC
MRF SWP
F.E HEAD XO CANCEL
812-13
DRUM ON
DRIVE+9V
IC801
DRUM MOTOR DRIVE
DMC
DMV
DMU
DMW
805-3
805-1
805-2
805-4
M1001 DRUM MOTOR
DRUM MOTOR ASS'Y (2/2)
SE(2/2)
812-6
812-7
CAPSTAN ERROR
CAPSTAN BIAS
IC804(2/2)
CAPSTAN POWER AMP
Q806,880
POWER DRIVE
DRIVE+9V
Q807
812-9
CAPSTAN ON CONT
GAIN SW
REG 5V(ANA)
Q908,909
EMERGENCY STOP
812-8
812-10
CAPSTAN ON
CAPSTAN:L:FWD/RVS
IC802
CAPSTAN MOTOR DRIVE
CMU
CMV
CMW
806-1
808-2
808-3
M1002 CAPSTAN MOTOR
VHE(+)
VHE(-)
UHE(+)
UHE(-)
WHE(+)
WHE(-)
808-5
808-6
808-7
808-8
808-10
808-11
HALL DEVICE
D803 LEVEL SHIFT
MD-23P(2/4)
CAPSTAN MOTOR ASS'Y (2/2)

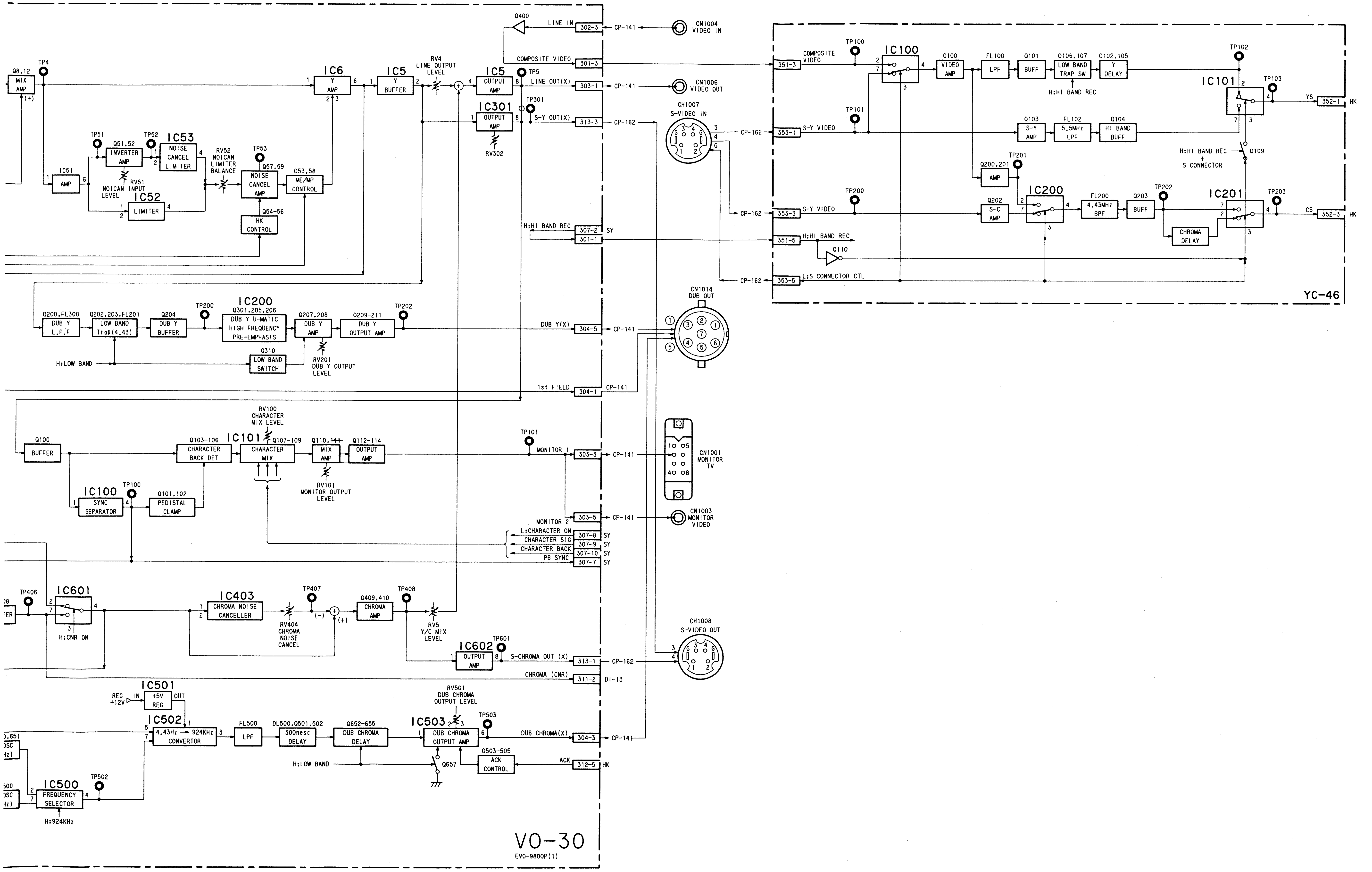
REEL SERVO, SYSTEM CONTROL


IC001
MODE CONTROL
IC003
MECHANISM CONTROL 2(ATF)
IC002
MECHANISM CONTROL 1(MECH)
IC004 MECHANISM CONTROL 3(HMS)
IC007(1/2)
IC008
INITIAL RESET
X001
8MHz OSC
X002
5MHz OSC
4.19MHz OSC
Q002
Q003
Q004
D003
Q006
Q008
Q014
Q015
Q018
Q109
Q713
Q011
DIFEER-ENTIAL
Q007,008,D006,011
D → A CONV
DOD SWITCH
Q112,113
D010
D008 Q005
TP001
TP002
+5V
SY
DC
MB ← MD
CHECK PIN
DI-12
HK ← IG
RS
FR
PFS
PFS LED
MSO2
MSI2
L:SCK2
L:MODE CS
L:ENABLE
L:POWER ON
L:PCC CS
L:IDM CS
FUNC KEY 1
FUNC KEY 2
FUNC KEY 3
FUNC KEY 4
STILL ADJ
SLOW TR
L:STB
L:LCD BUSY
H:TC/L:REEL
H:SP/L:LP
L:LCD CS
H:COM/L:DATA
L:FEEDER
L:AFM STEREO
V PB MODE
HK
L:AGC FAST
MPHG
V MUTE
RP PB MODE
JOG
JOG VD
DOD
L:FH MSK
L:FE ON
L:LP/H:SP
L:SCK
MSO
MSI
L:RESET
RESET
L:ATF IN H
L:PCM ATF
L:VINS
HB DET
T-CAP ON
T-CAP F/R
RP AFREC
L SW C
UNSW +5V
CASECON UP
CASECON DOWN
L:CASSETTE DOWN
L:CASSETTE IN
L:CONT M LEFT
LOAD
UNLOAD
L SW A
L SW B
CONT L
CONT R
M SW A
M SW B
M SW C
L:TOP
L:END
L:START
L:HOLD
SEL1
SEL2
BIAS DOWN
L:FF/L:REW
TAPE PATH ADJ
IG → HK
STILL SW
SEL 16
HCHG
TSA
TSB
L:ATF LOCK
JOG VD INT
M 35 DATA
L:35 SCK
L:35 SC
35 M DATA
H:ME/L:MP
RF SW PULSE
AUTO
DRUM ON
REEL DIR
REEL SWG
FH CONT2
FH CONT1
CAP FG
ST ID
SLOW
L:HI REV
L:HI CUE
L:CUE
L:REV
REEL FWD/RVS
REEL BRAKE
PAUSE
L:PB PAUSE
L:CAP ON
H:SP/L:LP
GAIN CONT
COMP A CONT
RF PK
L:FEON
L:EMRG OFF
REEL FLYING
L:RVS SLOW
L:REEL RVS ON
L:REEL START
R RVS MODE
CAP FWD/RVS
L:FH MSK
D0-D4
CAP ON CONT
RP PB MODE
ATF SW
N PULSE
SP X2
L:-X3
L:-X1
REEL0
REEL7
L:REEL SERVO ON
SFG
TFG1
TFG2
REC PROOF
REELBIAS
MD(2/4)
L:REEL BRAKE
L:CUE
L:HI CUE
REEL L:FWD/RVS
3STATE
0V FWD
2.5V STOP
5V RVS
IC903
TP901
WAVE SHAPER
Q904,905 FREQUENCY SWITCH
RV901 REEL SPEED
REEL BIAS
L:REEL SERVO ON
Q301
SOLENOID START
Q303
SOLENOID HOLD
Q305,PF303 S-REEL FG SENSOR
S FG
LOADING MOTOR DRIVE
CONTROL MOTOR DRIVE
SE-10P(2/2)
EVO-9800P(1)

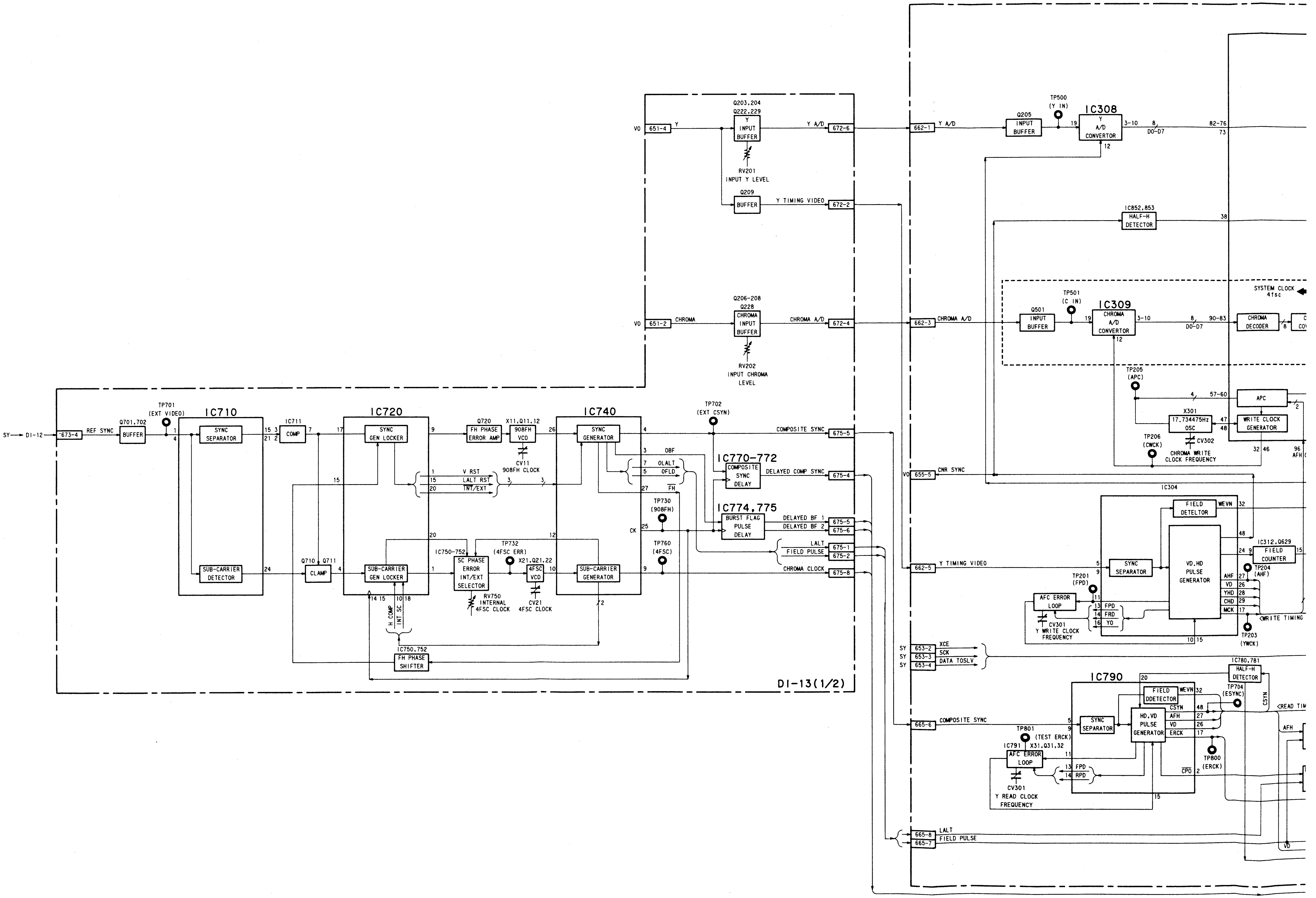

IC003
MECHANISM CONTROL 2(ATF)
IC002
MECHANISM CONTROL 1(MECH)
IC004 MECHANISM CONTROL 3(HMS)
X001 5MHz OSC
X002 5MHz OSC
4.19MHz OSC
TP002
TP001
+5V
PFS LED
PFS ATF
SI
SO
L:SCK
L:INH SP/LP
NTSC/L:PAL
RF PK
L:RST
TOP
END
L:ATF CS
XTAL
EXTAL
CASECON UP
CASECON DOWN
L:CASSETTE DOWN
L:CASSETTE IN
LOAD
UNLOAD
L SW A
L SW B
L SW C
CONT L
CONT R
M SW A
M SW B
M SW C
L:TOP
L:END
L:START
L:HOLD
SEL1
BIAS DOWN
L:FF/L:REW
SEL2
STILL SW
SEL 16
HCHG
TSA
TSB
L:ATF LOCK
JOG VD INT
35 SO
L:35 SCK
L:35 CS
35 SI
H:ME/L:MP
RF SWP
RF SW PULSE
AUTO
L:DRUM ON
REEL DIR
JOG
REEL SWG
FH CONT2
FH CONT1
CAP FG
ST ID
SLOW
L:HI REV
L:HI CUE
L:CUE
L:REV
REEL FWD/RVS
REEL BRAKE
L:PB PAUSE
PAUSE
L:CAP ON
H:SP/L:LP
GAIN CONT
COMP A CONT
RP PB MODE
JOG VD
DOD
L:FEON
L:EMRG OFF
REEL FLYING
L:RVS SLOW
L:REEL RVS ON
L:REEL START
R RVS MODE
CAP FWD/RVS
L:FH MSK
D0-D4
L:RESET
L:HMS CS
V MUTE
ATF SW
N PULSE
SP X2
L:-X3
L:-X1
REEL0
REEL7
L:REEL SERVO ON
SFG
TFG1
TFG2
REC PROOF
Q003
Q004
D003
Q008
Q109
Q713
Q011 DIFEER-ENTIAL
Q007,008, D006,011
D→A CONV
DRUM ON
CAP ON CONT
REELBIAS
MPHG
TAPE PATH ADJ
IG → HK
FR
MD(2/4)
SE-10P(2/2)
EVO-9800P(1)
IC806 CASECON MOTOR DRIVE
Q811 DRIVE
Q810 DRIVE
CASECON M CW
CASECON M CCW
M1004 CASSETTE COMPARTMENT MOTOR
S103 CASSETTE LOCK
S102 CASSETTE LOADING
IC805(1/2) TAPE TOP DETECTOR
IC805(2/2) TAPE END DETECTOR
Q715 TAPE TOP SENSOR
Q715 TAPE END SENSOR
TS-74
TS-74
MD-23P(3/4)
TAPE RED (+)
D001 TAPE RED
LD-1
IC302 LOADING MOTOR DRIVE
LOAD M CW
LOAD M CCW
M1006 LOADING MOTOR
LOADING SWITCH
LS-9
IC301 CONTROL MOTOR DRIVE
CONT M CW
CONT M CCW
M1005 CONTROL MOTOR
MODE SWITCH
MS-4
Q301,302 SOLENOID START
Q303,304 SOLENOID HOLD
START
HOLD
PM1001 BRAKE SOLENOID
S FG
Q305,PF303 S-REEL FG SENSOR
Q306,PH301 T-REEL 1 FG SENSOR
Q307,PH302 T-REEL 2 FG SENSOR
S1010
RS-31
IC901 REEL MOTOR DRIVE
Q903 DRIVE
Q901 DRIVE
Q902 DRIVE
RMU
RMV
RMW
M1003 REEL MOTOR
HALL DEVICE
REEL MOTOR ASSY
VHE(+)
VHE(-)
UHE(+)
UHE(-)
WHE(+)
WHE(-)
REEL L:FWD/RVS
3STATE
0V FWD
2.5V STOP
5V RVS
L:REEL BRAKE
IC903
WAVE SHAPER
TP901
F→V CONV
ERROR AMP
Q904,905 FREQUENCY SWITCH
RV901 REEL SPEED
IC902(1/3) REEL ERROR AMP
IC904(1/2)
Q906
IC902(2/3) REEL BIAS AMP
DRIVE+5V
Q907
IC902(3/3) REEL ERROR AMP
IC904(2/2)
Q812,813 POWER DRIVE
TP902
Q820,821 +5V REG
DRIVE +9V
DRIVE +5V
REEL BIAS
L:REEL SERVO ON
MD-23P(4/4)

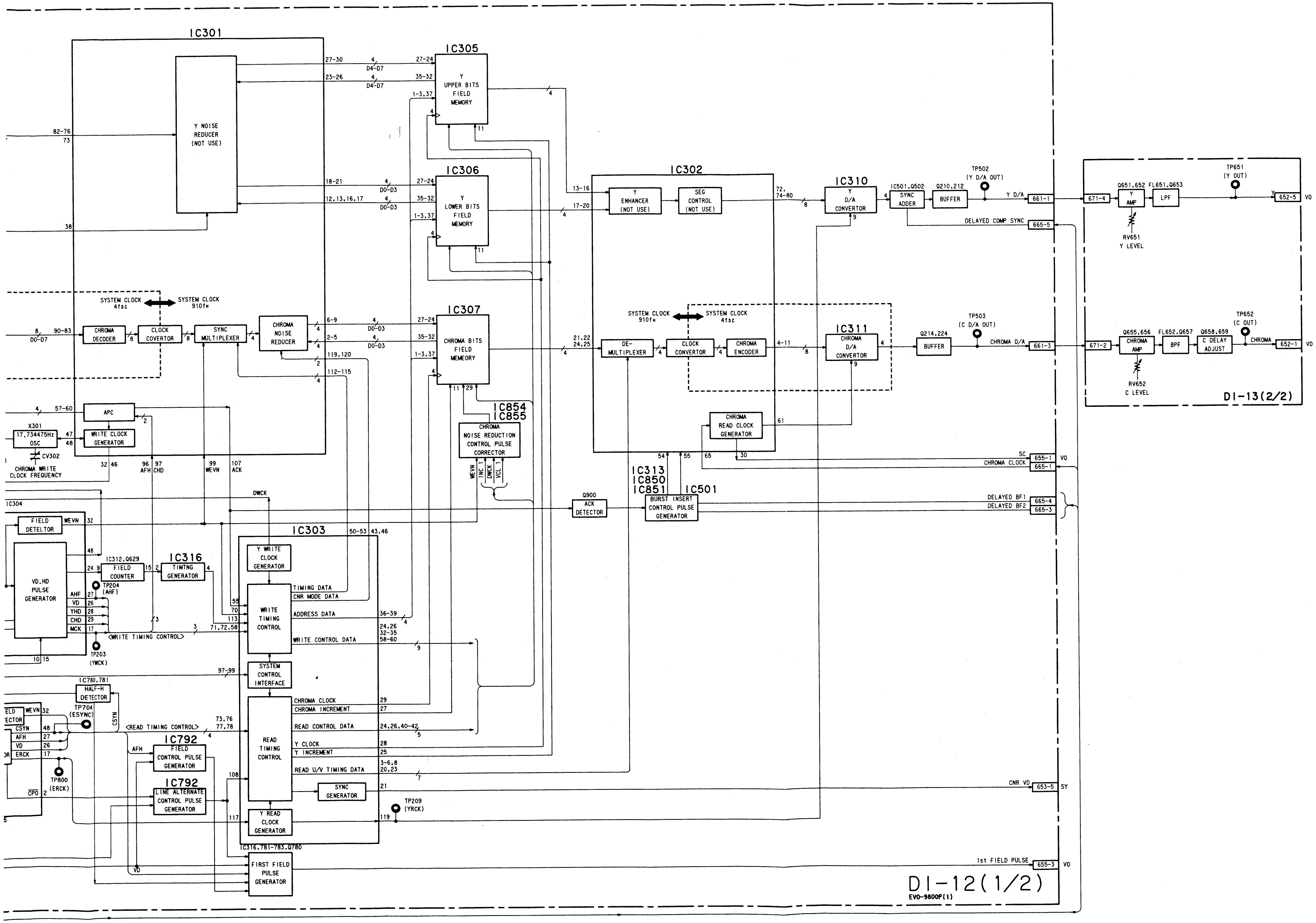
VIDEO INTERFACE


DI-13 310-1 Y(CNR)
HK 308-7 Y(X)
DI-13 310-3 Y(CNR)
IC1 H:CNR ON
Q10,11 Y EQ
IC2 Q1 Y CARRIER LEAK LIMITER
RV1 LIMITER BALANCE
IC3 Q2 Y AMP
TP1
TP2
IC4 Q4 H CORRELATOR
DL301 113+113ms DELAY
TP3
RV2 CARRIER LEAK CANCEL (GAIN)
Q8,12 MIX AMP
TP4
Q5,DL2 140nsec DELAY
Q6,7 Y DELAY
RV3 CARRIER LEAK CANCEL (PHASE)
SY 307-4 L:ME TAPE/H:CNR
HK 308-1 L:CNR ON
Q9
IC51 AMP
TP51
Q51,52 INVERTER AMP
RV51 NOICAN INPUT LEVEL
TP52
IC53 NOISE CANCEL LIMITER
IC52 LIMITER
RV52 NOICAN LIMITER BALANCE
TP53
Q57,59 NOISE CANCEL AMP
Q54-56 HK CONTROL
Q53,58 ME/MP CONTROL
IC6 Y AMP
IC5 Y BUFFER
RV4 LINE OUTPUT LEVEL
IC5 OUTPUT AMP
TP5
LINE OUT(X)
IC301 OUTPUT AMP
TP301
S-Y OUT(X)
RV302
Q400
LINE IN
COMPOSITE VIDEO
302-3 CP-141 CN1004 VIDEO IN
301-3
303-1 CP-141 CN1006 VIDEO OUT
313-3 CP-162
CH1007 S-VIDEO IN
CP-162 353-1 S-Y VIDEO
CP-162 353-3 S-Y VIDEO
H:HI BAND REC 307-2 SY
301-1
351-3 COMPOSITE VIDEO
351-5 H:HI BAND F
Q1
CP-162 353-5 L:S CONNECT
HK 308-5 HK
HK 308-3 L:ME/H:MP
CN1005 SYNC IN CP-141 302-1 REF SYNC
Q401
SY 307-12 REF SYNC
SP/HIGH BAND DUB OUT SELECT
LOW
804-3
SW-347A
306-1 H:924KHz
Q509 H:LOW BAND
SY 307-1 H:CNR ON
314-3 H:CNR ON
Q200,FL300 DUB Y L.P.F
Q202,203,FL201 LOW BAND Trap(4.43)
Q204 DUB Y BUFFER
TP200
IC200 Q301,205,206 DUB Y U-MATIC HIGH FREQUENCY PRE-EMPHASIS
Q207,208 DUB Y AMP
Q209-211 DUB Y OUTPUT AMP
TP202
RV201 DUB Y OUTPUT LEVEL
Q310 LOW BAND SWITCH
H:LOW BAND
DUB Y(X) 304-5 CP-141
CN1014 DUB OUT
1st FIELD 304-1 CP-141
RV405 1st FIELD PULSE WIDTH
IC400 Q411,412 PULSE WIDTH MMV
TP602
DI-12 311-7 1st FIELD P
Q413,Q414 CNR SW
H:CNR ON
Q100 BUFFER
Q103-106 CHARACTER BACK DET
RV100 CHARACTER MIX LEVEL
IC101 Q107-109 CHARACTER MIX
Q110,111 MIX AMP
Q112-114 OUTPUT AMP
RV101 MONITOR OUTPUT LEVEL
IC100 SYNC SEPARATOR
TP100
Q101,102 PEDISTAL CLAMP
TP101
MONITOR 1 303-3 CP-141
CN1001 MONITOR TV
MONITOR 2 303-5 CP-141
CN1003 MONITOR VIDEO
L:CHARACTER ON 307-8 SY
CHARACTER SIG 307-9 SY
CHARACTER BACK 307-10 SY
PB SYNC 307-7 SY
DI-13 311-3 CHROMA(CNR)
SY 307-5 H:EE/L:PB
Q605
HK 312-3 PB CHROMA
Q506 BUFFER
Q602-604 CHROMA DELAY
TP409
IC401 ENVELOPE DETECTOR
Q407
RV401 Y DG COMPENSATOR
TP404
RV402 HIGH SPEED ACC GAIN
IC402 HIGH SPEED ACC
Q408 BUFFER
TP406
IC601
H:CNR ON
TP405
RV403 HIGH SPEED ACC LEVEL
TP403
Q403-406 APC DET
TP402
Q402 IC400 APC BURST GATE MMV
RV400 APC BURST GATE WIDTH
DI-12 311-9 CNR SYNC
Q507,508,512 CHROMA DELAY
IC403 CHROMA NOISE CANCELLER
RV404 CHROMA NOISE CANCEL
TP407
Q409,410 CHROMA AMP
TP408
RV5 Y/C MIX LEVEL
IC602 OUTPUT AMP
TP601
S-CHROMA OUT (X) 313-1 CP-162
CH1008 S-VIDEO OUT
CHROMA (CNR) 311-2 DI-13
RV602 4.43MHz
DI-12 311-5 REF FSC(CNR)
HK 312-2 CORE FSC
IC603
H:CNR ON
IC600 PILOT BURST PHASE
LV600 PILOT BURST PHASE
RV601 PILOT BURST LEVEL
IC505
Q600,601 IC600 PHASE/WIDTH MM
RV600 PILOT BURST WIDTH
H:LOW BAND
TP501
X650,Q650,651 LOCAL OSC (5.36MHz)
CV650 5.36MHz
X500,Q500 LOCAL OSC (5.12MHz)
CV500 5.12MHz
IC500 FREQUENCY SELECTOR
H:924KHz
TP502
IC501 REG +12V IN +5V REG OUT
IC502 4.43Hz → 924KHz CONVERTOR
FL500 LPF
DL500,Q501,502 300nesc DELAY
Q652-655 DUB CHROMA DELAY
H:LOW BAND
RV501 DUB CHROMA OUTPUT LEVEL
IC503 DUB CHROMA OUTPUT AMP
TP503
DUB CHROMA(X) 304-3 CP-141
Q657
Q503-505 ACK CONTROL
ACK 312-5 HK
VO-30
EVO-9800P(1)

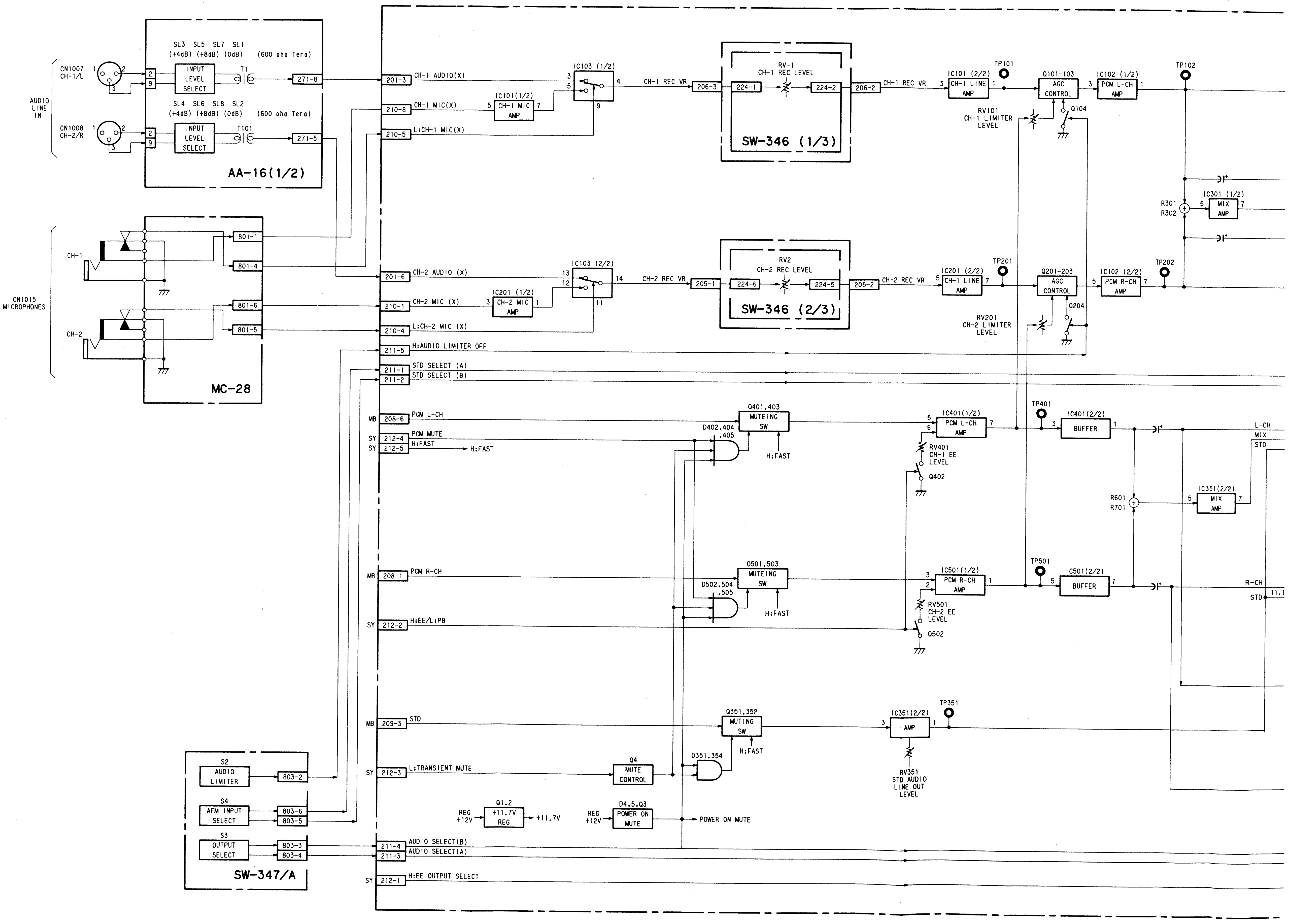

Q400
LINE IN
302-3
CP-141
CN1004 VIDEO IN
COMPOSITE VIDEO
301-3
Q8,12 MIX AMP
TP4
IC6 Y AMP
IC5 Y BUFFER
RV4 LINE OUTPUT LEVEL
IC5 OUTPUT AMP
TP5
LINE OUT(X)
303-1
CN1006 VIDEO OUT
IC301 OUTPUT AMP
TP301
S-Y OUT(X)
313-3
CP-162
RV302
TP51
TP52
Q51,52 INVERTER AMP
IC53 NOISE CANCEL LIMITER
RV52 NOICAN LIMITER BALANCE
TP53
Q57,59 NOISE CANCEL AMP
Q53,58 ME/MP CONTROL
IC51 AMP
RV51 NOICAN INPUT LEVEL
IC52 LIMITER
Q54-56 HK CONTROL
H:HI BAND REC
307-2 SY
301-1
CH1007 S-VIDEO IN
Q200,FL300 DUB Y L.P.F
Q202,203,FL201 LOW BAND Trap(4.43)
Q204 DUB Y BUFFER
TP200
IC200 Q301,205,206 DUB Y U-MATIC HIGH FREQUENCY PRE-EMPHASIS
Q207,208 DUB Y AMP
Q209-211 DUB Y OUTPUT AMP
TP202
DUB Y(X)
304-5
H:LOW BAND
Q310 LOW BAND SWITCH
RV201 DUB Y OUTPUT LEVEL
CN1014 DUB OUT
1st FIELD
304-1
Q100 BUFFER
Q103-106 CHARACTER BACK DET
IC101
RV100 CHARACTER MIX LEVEL
Q107-109 CHARACTER MIX
Q110,111 MIX AMP
Q112-114 OUTPUT AMP
RV101 MONITOR OUTPUT LEVEL
TP101
MONITOR 1
303-3
CN1001 MONITOR TV
IC100 SYNC SEPARATOR
TP100
Q101,102 PEDISTAL CLAMP
MONITOR 2
303-5
CN1003 MONITOR VIDEO
L:CHARACTER ON 307-8 SY
CHARACTER SIG 307-9 SY
CHARACTER BACK 307-10 SY
PB SYNC 307-7 SY
TP406
IC601
H:CNR ON
IC403 CHROMA NOISE CANCELLER
RV404 CHROMA NOISE CANCEL
TP407
Q409,410 CHROMA AMP
TP408
RV5 Y/C MIX LEVEL
IC602 OUTPUT AMP
TP601
S-CHROMA OUT (X)
313-1
CH1008 S-VIDEO OUT
CHROMA (CNR)
311-2
DI-13
IC501 +5V REG
REG +12V
IN OUT
IC502 4.43Hz → 924KHz CONVERTOR
FL500 LPF
DL500,Q501,502 300nesc DELAY
Q652-655 DUB CHROMA DELAY
IC503 DUB CHROMA OUTPUT AMP
RV501 DUB CHROMA OUTPUT LEVEL
TP503
DUB CHROMA(X)
304-3
H:LOW BAND
Q657
Q503-505 ACK CONTROL
ACK
312-5 HK
IC500 FREQUENCY SELECTOR
TP502
H:924KHz
VO-30
EVO-9800P(1)
COMPOSITE VIDEO
351-3
TP100
IC100
Q100 VIDEO AMP
FL100 LPF
Q101 BUFF
Q106,107 LOW BAND TRAP SW
Q102,105 Y DELAY
H:HI BAND REC
TP102
IC101
TP103
YS
352-1 HK
TP101
353-1
S-Y VIDEO
Q103 S-Y AMP
FL102 5.5MHz LPF
Q104 HI BAND BUFF
H:HI BAND REC + S CONNECTOR
Q109
Q200,201 AMP
TP201
TP200
353-3
S-Y VIDEO
Q202 S-C AMP
IC200
FL200 4.43MHz BPF
Q203 BUFF
TP202
IC201
TP203
CS
352-3 HK
CHROMA DELAY
351-5
H:HI BAND REC
Q110
353-5
L:S CONNECTOR CTL
YC-46

DIGITAL CNR

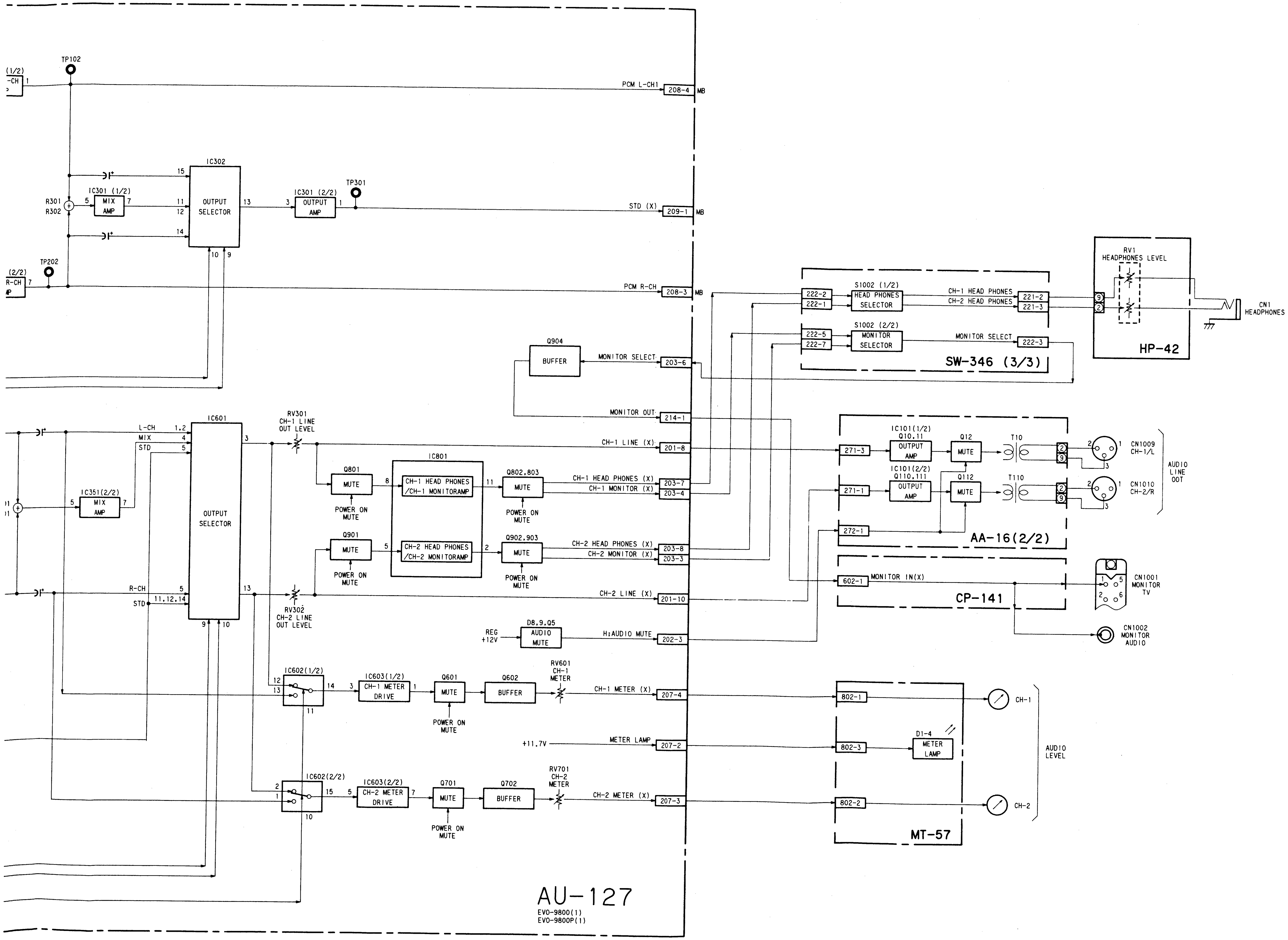

Q203,204
Q222,229
Y INPUT BUFFER
RV201
INPUT Y LEVEL
Q209
BUFFER
Y TIMING VIDEO
Y A/D
651-4
672-6
672-2
Q206-208
Q228
CHROMA INPUT BUFFER
RV202
INPUT CHROMA LEVEL
CHROMA A/D
651-2
672-4
SY → DI-12 → 673-4
REF SYNC
Q701,702
BUFFER
TP701
(EXT VIDEO)
IC710
SYNC SEPARATOR
SUB-CARRIER DETECTOR
IC711
COMP
Q710 Q711
CLAMP
IC720
SYNC GEN LOCKER
SUB-CARRIER GEN LOCKER
Q720
FH PHASE ERROR AMP
X11,Q11,12
908FH VCO
CV11
908FH CLOCK
V RST
LALT RST
INT/EXT
IC750-752
SC PHASE ERROR INT/EXT SELECTOR
RV750
INTERNAL 4FSC CLOCK
TP732
(4FSC ERR)
X21,Q21,22
4FSC VCO
CV21
4FSC CLOCK
H COMP
INT SC
IC750,752
FH PHASE SHIFTER
IC740
SYNC GENERATOR
SUB-CARRIER GENERATOR
OBF
OLALT
OFLD
FH
CK
TP702
(EXT CSYN)
TP730
(908FH)
TP760
(4FSC)
IC770-772
COMPOSITE SYNC DELAY
IC774,775
BURST FLAG PULSE DELAY
COMPOSITE SYNC
DELAYED COMP SYNC
DELAYED BF 1
DELAYED BF 2
LALT
FIELD PULSE
CHROMA CLOCK
675-5
675-4
675-5
675-6
675-1
675-2
675-8
DI-13(1/2)
662-1
Y A/D
Q205
INPUT BUFFER
TP500
(Y IN)
IC308
Y A/D CONVERTOR
DO-D7
IC852,853
HALF-H DETECTOR
SYSTEM CLOCK 4fsc
662-3
CHROMA A/D
Q501
INPUT BUFFER
TP501
(C IN)
IC309
CHROMA A/D CONVERTOR
CHROMA DECODER
TP205
(APC)
APC
X301
17.734475Hz OSC
WRITE CLOCK GENERATOR
TP206
(CWCK)
CV302
CHROMA WRITE CLOCK FREQUENCY
655-5
CNR SYNC
IC304
FIELD DETELTOR
WEVN
662-5
Y TIMING VIDEO
SYNC SEPARATOR
VD,HD PULSE GENERATOR
AHF
VD
YHD
CHD
MCK
IC312,Q629
FIELD COUNTER
TP204
(AHF)
TP201
(FPD)
AFC ERROR LOOP
FPD
FRD
YO
CV301
Y WRITE CLOCK FREQUENCY
WRITE TIMING
TP203
(YWCK)
653-2 XCE
653-3 SCK
653-4 DATA TOSLV
IC780,781
HALF-H DETECTOR
TP704
(ESYNC)
CSYN
READ TIM
IC790
FIELD DDETECTOR
WEVN
HD,VD PULSE GENERATOR
CSYN
AFH
VD
ERCK
665-6
COMPOSITE SYNC
SYNC SEPARATOR
TP801
(TEST ERCK)
IC791
X31,Q31,32
AFC ERROR LOOP
FPD
RPD
CV301
Y READ CLOCK FREQUENCY
TP800
(ERCK)
CPO
665-8 LALT
665-7 FIELD PULSE
AFH
VD


IC301
Y NOISE REDUCER (NOT USE)
IC305
Y UPPER BITS FIELD MEMORY
IC306
Y LOWER BITS FIELD MEMORY
IC307
CHROMA BITS FIELD MEMORY
IC302
Y ENHANCER (NOT USE)
SEG CONTROL (NOT USE)
DE-MULTIPLEXER
CLOCK CONVERTOR
CHROMA ENCODER
CHROMA READ CLOCK GENERATOR
IC310
Y D/A CONVERTOR
IC311
CHROMA D/A CONVERTOR
IC501,Q502
SYNC ADDER
Q210,212
BUFFER
Q214,224
BUFFER
TP502 (Y D/A OUT)
TP503 (C D/A OUT)
Y D/A
CHROMA D/A
DELAYED COMP SYNC
SYSTEM CLOCK 4fsc
SYSTEM CLOCK 910fH
CHROMA DECODER
CLOCK COVERTOR
SYNC MULTIPLEXER
CHROMA NOISE REDUCER
APC
X301
17.734475Hz OSC
WRITE CLOCK GENERATOR
CV302
CHROMA WRITE CLOCK FREQUENCY
IC854
IC855
CHROMA NOISE REDUCTION CONTROL PULSE CORRECTOR
WEVN
INC
DWCK
VCL
Q900
ACK DETECTOR
IC313
IC850
IC851
IC501
BURST INSERT CONTROL PULSE GENERATOR
SC
CHROMA CLOCK
DELAYED BF1
DELAYED BF2
IC304
FIELD DETELTOR
VD.HD PULSE GENERATOR
AHF
VD
YHD
CHD
MCK
IC312,Q629
FIELD COUNTER
TP204 (AHF)
IC316
TIMTNG GENERATOR
TP203 (YWCK)
<WRITE TIMING CONTROL>
IC303
Y WRITE CLOCK GENERATOR
WRITE TIMING CONTROL
TIMING DATA
CNR MODE DATA
ADDRESS DATA
WRITE CONTROL DATA
SYSTEM CONTROL INTERFACE
READ TIMING CONTROL
CHROMA CLOCK
CHROMA INCREMENT
READ CONTROL DATA
Y CLOCK
Y INCREMENT
READ U/V TIMING DATA
SYNC GENERATOR
Y READ CLOCK GENERATOR
TP209 (YRCK)
CNR VD
IC780,781
HALF-H DETECTOR
TP704 (ESYNC)
CSYN
<READ TIMING CONTROL>
IC792
FIELD CONTROL PULSE GENERATOR
IC792
LINE ALTERNATE CONTROL PULSE GENERATOR
TP800 (ERCK)
CPO
IC316,781-783,Q780
FIRST FIELD PULSE GENERATOR
1st FIELD PULSE
DI-12(1/2)
EVO-9800P(1)
Q651,652
Y AMP
FL651,Q653
LPF
TP651 (Y OUT)
RV651 Y LEVEL
Q655,656
CHROMA AMP
FL652,Q657
BPF
Q658,659
C DELAY ADJUST
TP652 (C OUT)
RV652 C LEVEL
CHROMA
DI-13(2/2)
661-1
661-3
665-5
655-1
665-1
665-4
665-3
653-5
655-3
671-4
671-2
652-5
652-1
VO
SY

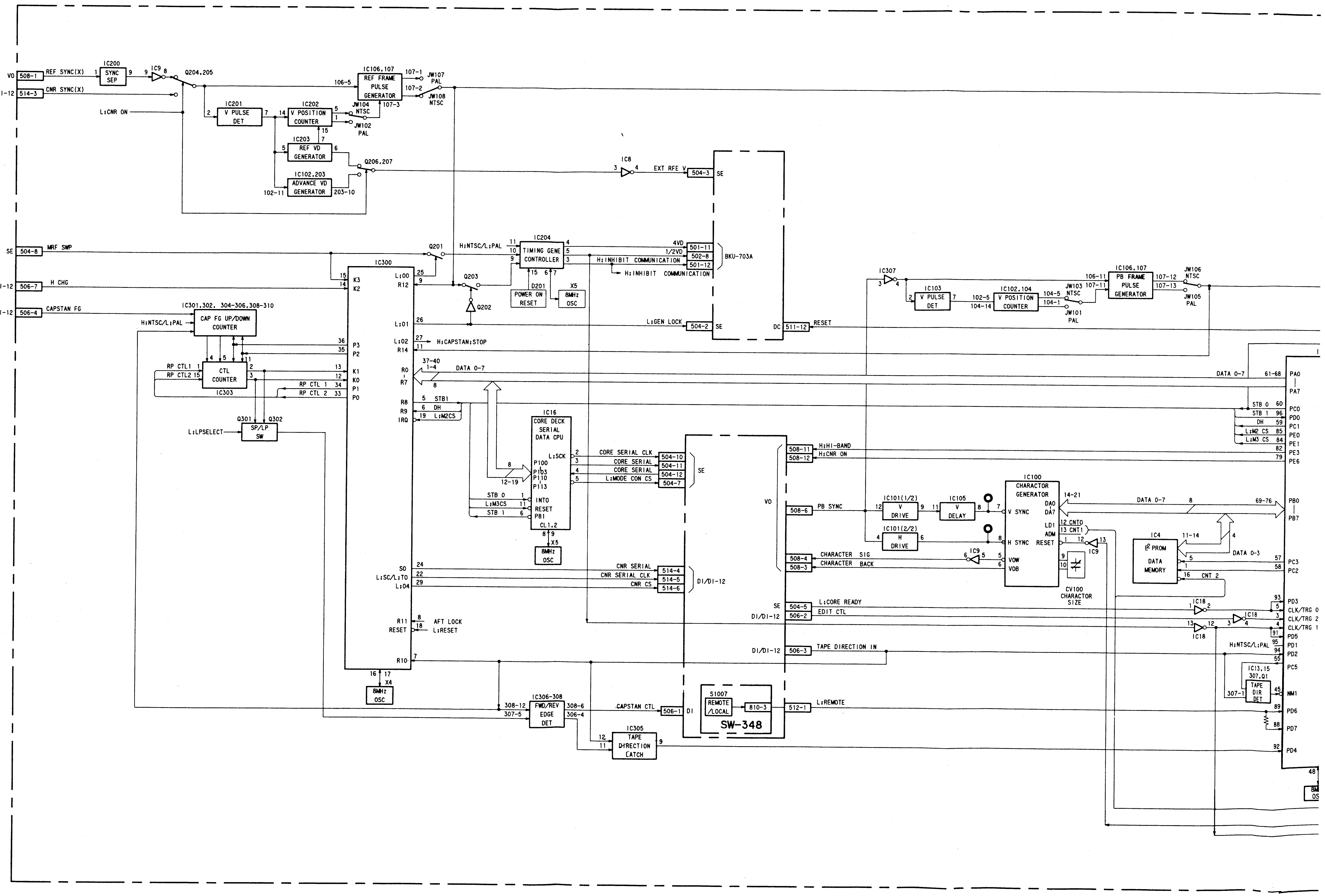
AUDIO SYSTEM


AUDIO LINE IN
CN1007 CH-1/L
CN1008 CH-2/R
SL3 SL5 SL7 SL1
(+4dB) (+8dB) (0dB) (600 ohm Term)
INPUT LEVEL SELECT
T1
271-8
SL4 SL6 SL8 SL2
(+4dB) (+8dB) (0dB) (600 ohm Term)
T101
271-5
AA-16(1/2)
CN1015 MICROPHONES
CH-1
CH-2
801-1
801-4
801-6
801-5
MC-28
201-3 CH-1 AUDIO(X)
210-8 CH-1 MIC(X)
210-5 L:CH-1 MIC(X)
IC101(1/2) CH-1 MIC AMP
IC103 (1/2)
CH-1 REC VR
206-3
224-1
RV-1 CH-1 REC LEVEL
224-2
SW-346 (1/3)
206-2 CH-1 REC VR
IC101 (2/2) CH-1 LINE AMP
TP101
Q101-103 AGC CONTROL
Q104
RV101 CH-1 LIMITER LEVEL
IC102 (1/2) PCM L-CH AMP
TP102
R301
R302
IC301 (1/2) MIX AMP
201-6 CH-2 AUDIO (X)
210-1 CH-2 MIC (X)
210-4 L:CH-2 MIC (X)
IC201 (1/2) CH-2 MIC AMP
IC103 (2/2)
CH-2 REC VR
205-1
224-6
RV2 CH-2 REC LEVEL
224-5
SW-346 (2/3)
205-2 CH-2 REC VR
IC201 (2/2) CH-1 LINE AMP
TP201
Q201-203 AGC CONTROL
Q204
RV201 CH-2 LIMITER LEVEL
IC102 (2/2) PCM R-CH AMP
TP202
211-5 H:AUDIO LIMITER OFF
211-1 STD SELECT (A)
211-2 STD SELECT (B)
MB 208-6 PCM L-CH
SY 212-4 PCM MUTE
SY 212-5 H:FAST
H:FAST
Q401,403 MUTEING SW
D402,404 ,405
H:FAST
IC401(1/2) PCM L-CH AMP
RV401 CH-1 EE LEVEL
Q402
TP401
IC401(2/2) BUFFER
L-CH
MIX
STD
R601
R701
IC351(2/2) MIX AMP
MB 208-1 PCM R-CH
Q501,503 MUTEING SW
D502,504 ,505
H:FAST
IC501(1/2) PCM R-CH AMP
RV501 CH-2 EE LEVEL
Q502
TP501
IC501(2/2) BUFFER
R-CH
STD
SY 212-2 H:EE/L:PB
MB 209-3 STD
Q351,352 MUTING SW
H:FAST
D351,354
IC351(2/2) AMP
TP351
RV351 STD AUDIO LINE OUT LEVEL
SY 212-3 L:TRANSIENT MUTE
Q4 MUTE CONTROL
REG +12V
Q1,2 +11.7V REG
+11.7V
REG +12V
D4,5,Q3 POWER ON MUTE
POWER ON MUTE
S2 AUDIO LIMITER
803-2
S4 AFM INPUT SELECT
803-6
803-5
S3 OUTPUT SELECT
803-3
803-4
SW-347/A
211-4 AUDIO SELECT(B)
211-3 AUDIO SELECT(A)
SY 212-1 H:EE OUTPUT SELECT

AUDIO SYSTEM


TP102
(1/2)
-CH
PCM L-CH1
208-4
MB
IC302
OUTPUT SELECTOR
IC301 (1/2)
MIX AMP
R301
R302
IC301 (2/2)
OUTPUT AMP
TP301
STD (X)
209-1
TP202
(2/2)
R-CH
PCM R-CH
208-3
Q904
BUFFER
MONITOR SELECT
203-6
MONITOR OUT
214-1
IC601
OUTPUT SELECTOR
L-CH
MIX
STD
R-CH
IC351(2/2)
MIX AMP
RV301
CH-1 LINE OUT LEVEL
CH-1 LINE (X)
201-8
IC801
Q801
MUTE
CH-1 HEAD PHONES /CH-1 MONITORAMP
POWER ON MUTE
Q802,803
MUTE
CH-1 HEAD PHONES (X)
CH-1 MONITOR (X)
203-7
203-4
Q901
MUTE
CH-2 HEAD PHONES /CH-2 MONITORAMP
Q902,903
MUTE
CH-2 HEAD PHONES (X)
CH-2 MONITOR (X)
203-8
203-3
CH-2 LINE (X)
201-10
RV302
CH-2 LINE OUT LEVEL
REG +12V
D8,9,Q5
AUDIO MUTE
H:AUDIO MUTE
202-3
IC602(1/2)
IC603(1/2)
CH-1 METER DRIVE
Q601
MUTE
Q602
BUFFER
RV601
CH-1 METER
CH-1 METER (X)
207-4
+11.7V
METER LAMP
207-2
IC602(2/2)
IC603(2/2)
CH-2 METER DRIVE
Q701
MUTE
Q702
BUFFER
RV701
CH-2 METER
CH-2 METER (X)
207-3
AU-127
EVO-9800(1)
EVO-9800P(1)
222-2
222-1
S1002 (1/2)
HEAD PHONES SELECTOR
CH-1 HEAD PHONES
CH-2 HEAD PHONES
221-2
221-3
222-5
222-7
S1002 (2/2)
MONITOR SELECTOR
MONITOR SELECT
222-3
SW-346 (3/3)
RV1
HEADPHONES LEVEL
CN1
HEADPHONES
HP-42
271-3
IC101(1/2)
Q10,11
OUTPUT AMP
Q12
MUTE
T10
CN1009
CH-1/L
271-1
IC101(2/2)
Q110,111
OUTPUT AMP
Q112
MUTE
T110
CN1010
CH-2/R
AUDIO LINE OUT
272-1
AA-16(2/2)
602-1
MONITOR IN(X)
CP-141
CN1001
MONITOR TV
CN1002
MONITOR AUDIO
802-1
CH-1
802-3
D1-4
METER LAMP
802-2
CH-2
AUDIO LEVEL
MT-57

SYSTEM CONTROL


VO
508-1
REF SYNC(X)
DI/DI-12
514-3
CNR SYNC(X)
IC200
SYNC SEP
IC9
Q204,205
IC106,107
REF FRAME PULSE GENERATOR
106-5
107-1
107-2
107-3
JW107 PAL
JW108 NTSC
L:CNR ON
IC201
V PULSE DET
IC202
V POSITION COUNTER
JW104 NTSC
JW102 PAL
IC203
REF VD GENERATOR
Q206,207
IC102,203
ADVANCE VD GENERATOR
102-11
203-10
IC8
EXT RFE V
504-3
SE
SE
504-8
MRF SWP
Q201
H:NTSC/L:PAL
IC204
TIMING GENE CONTROLLER
4VD
1/2VD
501-11
502-8
501-12
BKU-703A
H:INHIBIT COMMUNICATION
H:INHIBIT COMMUNICATION
DI/DI-12
506-7
H CHG
IC300
K3
K2
L:00
R12
Q203
D201
POWER ON RESET
X5
8MHz OSC
Q202
DI/DI-12
506-4
CAPSTAN FG
IC301,302, 304-306,308-310
CAP FG UP/DOWN COUNTER
H:NTSC/L:PAL
L:01
L:GEN LOCK
504-2
SE
DC
511-12
RESET
L:02
R14
H:CAPSTAN:STOP
P3
P2
RP CTL1
RP CTL2
CTL COUNTER
IC303
K1
K0
P1
P0
RP CTL 1
RP CTL 2
R0
R7
DATA 0-7
R8
R9
IRQ
STB1
DH
L:M2CS
Q301
Q302
L:LPSELECT
SP/LP SW
IC16
CORE DECK SERIAL DATA CPU
L:SCK
P100
P103
P110
P113
INTO
RESET
PB1
CL1,2
X5
8MHz OSC
STB 0
L:M3CS
STB 1
CORE SERIAL CLK
CORE SERIAL
CORE SERIAL
L:MODE CON CS
504-10
504-11
504-12
504-7
SE
S0
L:SC/L:T0
L:04
CNR SERIAL
CNR SERIAL CLK
CNR CS
514-4
514-5
514-6
DI/DI-12
R11
RESET
AFT LOCK
L:RESET
R10
X4
8MHz OSC
IC306-308
FWD/REV EDGE DET
308-12
307-5
308-6
306-4
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506-1
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IC305
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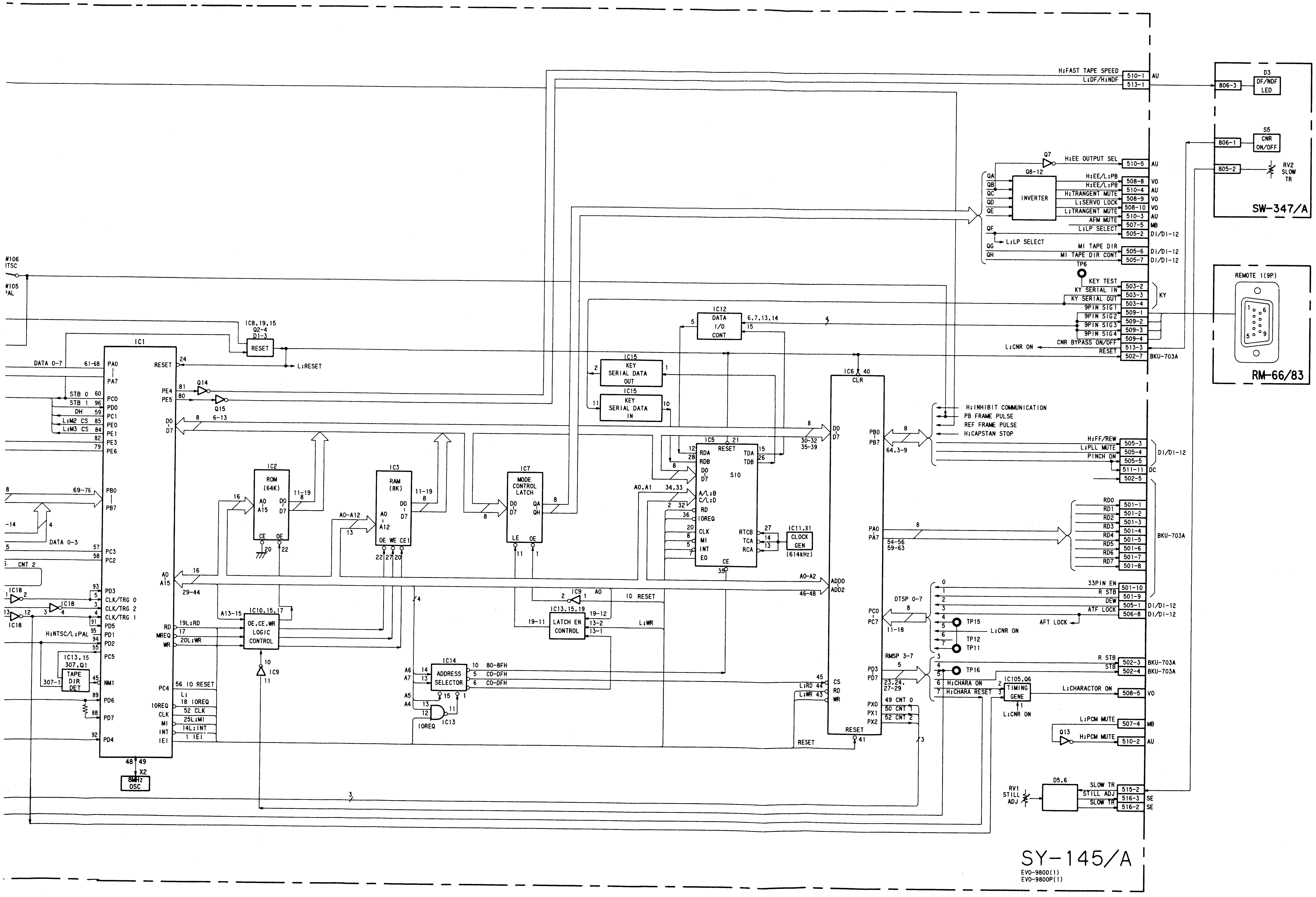
JW106 NTSC
JW105 PAL
VO
508-11
508-12
H:HI-BAND
H:CNR ON
508-6
PB SYNC
IC101(1/2)
V DRIVE
IC105
V DELAY
IC101(2/2)
H DRIVE
IC100
CHARACTOR GENERATOR
V SYNC
H SYNC
DA0
DA7
LD1
ADM
RESET
VOW
VOB
CV100 CHARACTOR SIZE
12 CNT0
13 CNT1
IC9
508-4
508-3
CHARACTER SIG
CHARACTER BACK
IC4
E² PROM DATA MEMORY
DATA 0-3
CNT 2
DATA 0-7
61-68
69-76
PA0
PA7
STB 0
STB 1
DH
L:M2 CS
L:M3 CS
PC0
PD0
PC1
PE0
PE1
PE3
PE6
PB0
PB7
PC3
PC2
SE
504-5
L:CORE READY
DI/DI-12
506-2
EDIT CTL
IC18
PD3
CLK/TRG 0
CLK/TRG 2
CLK/TRG 1
PD5
PD1
PD2
H:NTSC/L:PAL
DI/DI-12
506-3
TAPE DIRECTION IN
IC13,15 307,Q1
TAPE DIR DET
307-1
PC5
NMI
PD6
PD7
PD4
48


IC1
PA0
PA7
RESET
PE4
PE5
D0
D7
PB0
PB7
PC3
PC2
A0
A15
PD3
CLK/TRG 0
CLK/TRG 2
CLK/TRG 1
PD5
PD1
PD2
PC5
NMI
PD6
PD7
PD4
RD
MREQ
WR
PC4
IOREQ
CLK
MI
INT
IEI
DATA 0-7
STB 0
STB 1
DH
L;M2 CS
L;M3 CS
DATA 0-3
CNT 2
IC18
H;NTSC/L;PAL
IC13,15
307,Q1
TAPE DIR DET
8MHz OSC
X2
IC8,19,15
Q2-4
D1-3
RESET
L;RESET
Q14
Q15
IC2
ROM (64K)
IC3
RAM (8K)
IC7
MODE CONTROL LATCH
IC10,15,17
OE,CE,WR LOGIC CONTROL
IC9
IC14
ADDRESS SELECTOR
80-8FH
C0-DFH
IC13
IOREQ
IC13,15,19
LATCH EN CONTROL
L;WR
10 RESET
19L;RD
20L;WR
56 10 RESET
18 IOREQ
52 CLK
25L;MI
14L;INT
1 IEI
IC15
KEY SERIAL DATA OUT
IC15
KEY SERIAL DATA IN
IC12
DATA I/O CONT
IC5
SIO
RDA
RDB
TDA
TDB
A/L;B
C/L;D
RTCB
TCA
RCA
CE
IC11,X1
CLOCK GEN (614kHz)
IC6
CLR
PB0
PB7
PA0
PA7
PC0
PC7
PD3
PD7
PX0
PX1
PX2
ADD0
ADD2
CS
RD
WR
RESET
DTSP 0-7
RMSP 3-7
49 CNT 0
50 CNT 1
52 CNT 2
L;RD
L;WR
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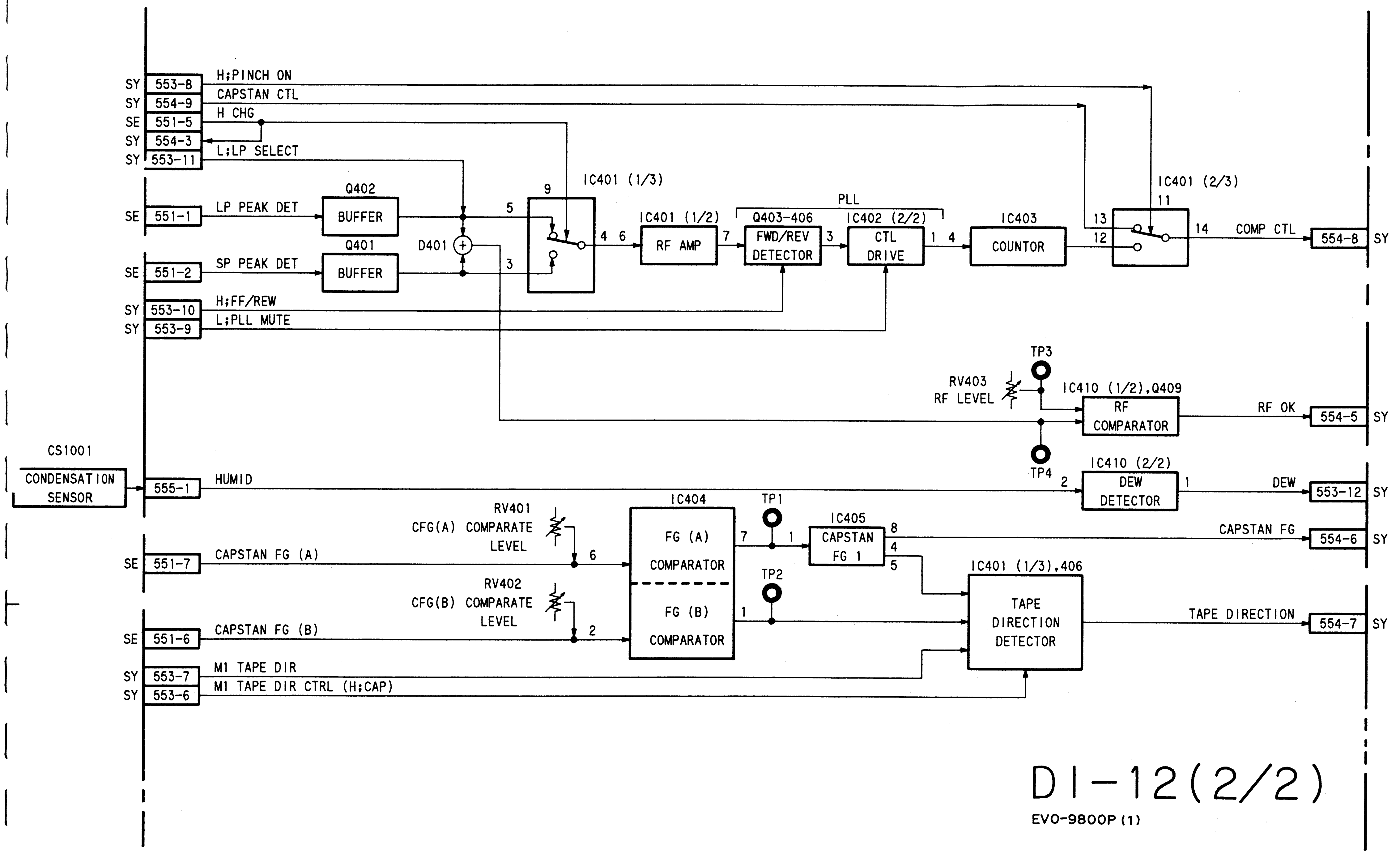
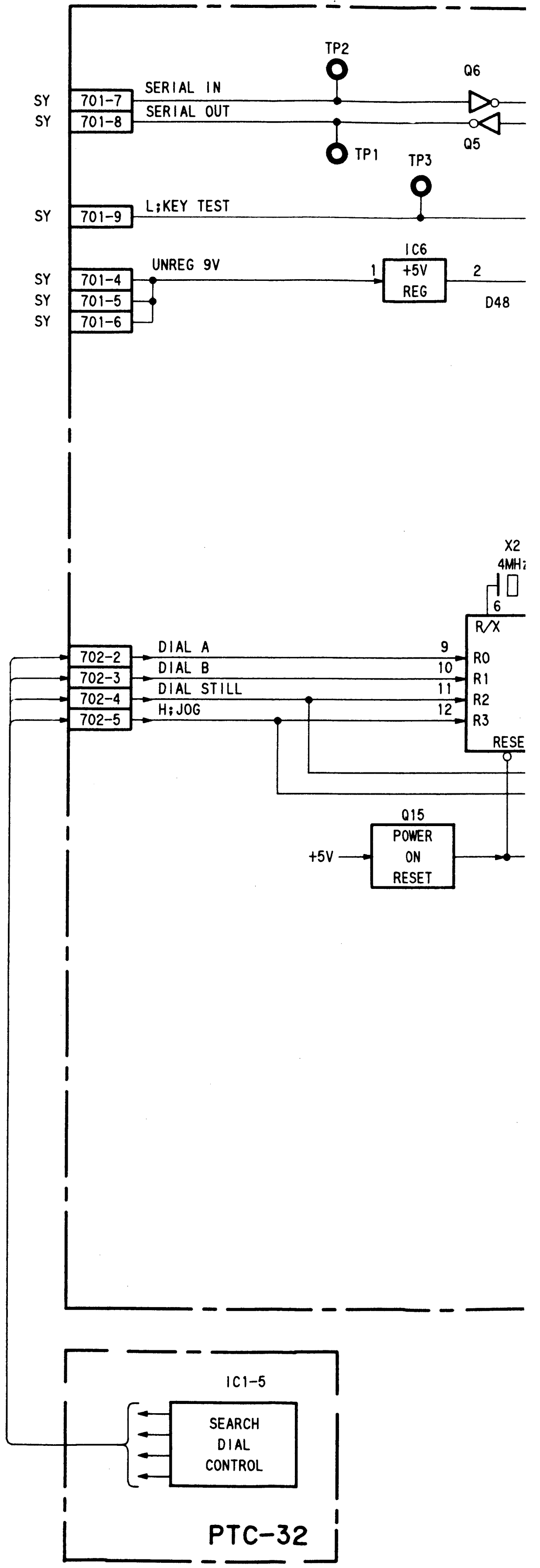
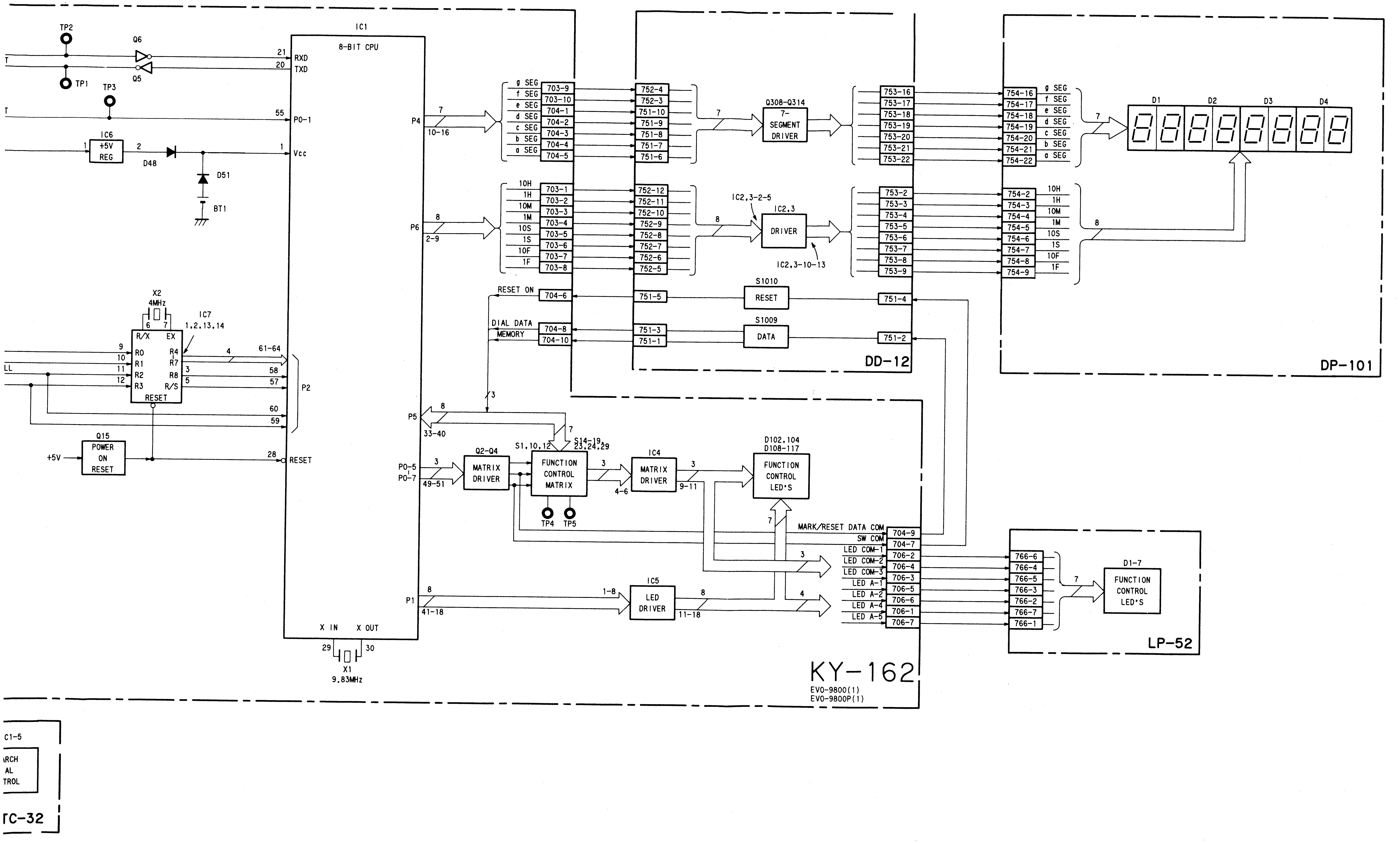
TP11
TP16
L;CNR ON
AFT LOCK
H;CHARA ON
H;CHARA RESET
IC105,Q6
TIMING GENE
L;CHARACTOR ON
Q13
L;PCM MUTE
H;PCM MUTE
RV1 STILL ADJ
D5,6
SLOW TR
STILL ADJ
H;INHIBIT COMMUNICATION
PB FRAME PULSE
REF FRAME PULSE
H;CAPSTAN STOP
H;FF/REW
L;PLL MUTE
PINCH ON
RD0
RD1
RD2
RD3
RD4
RD5
RD6
RD7
33PIN EN
R STB
DEW
ATF LOCK
R STB
STB
H;FAST TAPE SPEED
L;DF/H;NDF
Q7
H;EE OUTPUT SEL
Q8-12
INVERTER
QA
QB
QC
QD
QE
QF
QG
QH
H;EE/L;PB
H;EE/L;PB
H;TRANGENT MUTE
L;SERVO LOCK
L;TRANGENT MUTE
AFM MUTE
L;LP SELECT
L;LP SELECT
MI TAPE DIR
MI TAPE DIR CONT
TP6
KEY TEST
KY SERIAL IN
KY SERIAL OUT
9PIN SIG1
9PIN SIG2
9PIN SIG3
9PIN SIG4
CNR BYPASS ON/OFF
RESET
510-1
513-1
510-5
508-8
510-4
508-9
508-10
510-3
507-5
505-2
505-6
505-7
503-2
503-3
503-4
509-1
509-2
509-3
509-4
513-3
502-7
505-3
505-4
505-5
511-11
502-5
501-1
501-2
501-3
501-4
501-5
501-6
501-7
501-8
501-10
501-9
505-1
506-8
502-3
502-4
508-5
507-4
510-2
515-2
516-3
516-2
AU
VO
MB
DI/DI-12
KY
BKU-703A
DC
SE
D3
DF/NDF LED
806-3
S5
CNR ON/OFF
806-1
805-2
RV2 SLOW TR
SW-347/A
REMOTE 1(9P)
RM-66/83
#106 NTSC
#105 PAL
SY-145/A
EVO-9800(1)
EVO-9800P(1)

C DETECTOR/FUNCTION KEY BOARD


SY 553-8 H;PINCH ON
SY 554-9 CAPSTAN CTL
SE 551-5 H CHG
SY 554-3
SY 553-11 L;LP SELECT
SE 551-1 LP PEAK DET
Q402 BUFFER
SE 551-2 SP PEAK DET
Q401 BUFFER
D401
IC401 (1/3)
9 5 3 4 6
IC401 (1/2) RF AMP
7
PLL
Q403-406 FWD/REV DETECTOR
3
IC402 (2/2) CTL DRIVE
1 4
IC403 COUNTOR
IC401 (2/3)
11 13 12 14
COMP CTL
554-8 SY
SY 553-10 H;FF/REW
SY 553-9 L;PLL MUTE
TP3
RV403 RF LEVEL
IC410 (1/2),Q409 RF COMPARATOR
RF OK
554-5 SY
TP4
CS1001 CONDENSATION SENSOR
555-1 HUMID
IC410 (2/2) DEW DETECTOR
2 1
DEW
553-12 SY
RV401 CFG(A) COMPARATE LEVEL
IC404 FG (A) COMPARATOR
TP1
7 1
IC405 CAPSTAN FG 1
8 4 5
CAPSTAN FG
554-6 SY
SE 551-7 CAPSTAN FG (A)
6
RV402 CFG(B) COMPARATE LEVEL
2
FG (B) COMPARATOR
TP2
1
IC401 (1/3),406 TAPE DIRECTION DETECTOR
TAPE DIRECTION
554-7 SY
SE 551-6 CAPSTAN FG (B)
SY 553-7 M1 TAPE DIR
SY 553-6 M1 TAPE DIR CTRL (H;CAP)
DI-12(2/2)
EVO-9800P (1)


SY 701-7 SERIAL IN
SY 701-8 SERIAL OUT
TP2
Q6
Q5
TP1
TP3
SY 701-9 L;KEY TEST
SY 701-4 UNREG 9V
SY 701-5
SY 701-6
IC6 +5V REG
1 2
D48
X2 4MH
6
R/X
702-2 DIAL A
702-3 DIAL B
702-4 DIAL STILL
702-5 H;JOG
9 10 11 12
R0 R1 R2 R3
RESE
Q15 POWER ON RESET
+5V
IC1-5 SEARCH DIAL CONTROL
PTC-32

CTL DETECTOR/FUNCTION KEY BOARD


TP2
Q6
Q5
TP1
TP3
IC1
8-BIT CPU
21 RXD
20 TXD
55 P0-1
IC6
+5V REG
D48
D51
BT1
1 Vcc
P4
7
10-16
P6
8
2-9
g SEG
f SEG
e SEG
d SEG
c SEG
b SEG
a SEG
703-9
703-10
704-1
704-2
704-3
704-4
704-5
752-4
752-3
751-10
751-9
751-8
751-7
751-6
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753-16
753-17
753-18
753-19
753-20
753-21
753-22
754-16
754-17
754-18
754-19
754-20
754-21
754-22
D1
D2
D3
D4
10H
1H
10M
1M
10S
1S
10F
1F
703-1
703-2
703-3
703-4
703-5
703-6
703-7
703-8
752-12
752-11
752-10
752-9
752-8
752-7
752-6
752-5
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IC2,3
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753-2
753-3
753-4
753-5
753-6
753-7
753-8
753-9
754-2
754-3
754-4
754-5
754-6
754-7
754-8
754-9
RESET ON
704-6
751-5
S1010
RESET
751-4
DIAL DATA
MEMORY
704-8
704-10
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751-1
S1009
DATA
751-2
DD-12
DP-101
X2
4MHz
IC7
1,2,13,14
R/X
EX
R0
R1
R2
R3
R4
R7
R8
R/S
RESET
61-64
58
57
60
59
P2
Q15
POWER ON RESET
+5V
28 RESET
P5
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3
7
Q2-Q4
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8
41-18
1-8
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X OUT
29
30
X1
9.83MHz
KY-162
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EVO-9800P(1)
C1-5
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AL
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SECTION 12
SEMICONDUCTOR PIN ASSIGNMENT

ICs, transistors and diodes whoses functions are equivalent are described here. Therefore, incompatible device names may be described together. For parts replacement, refer to the Spare Parts section in this manual.

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MC14538BCP 12-25
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TA7745F 12-28
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TC4069UBP 12-29
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The circuit diagram of each IC is obtained from the IC data book published by the manufacturer.

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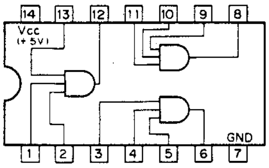
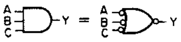
74F11PC (FSC)

TTL 3-INPUT POSITIVE-AND GATE

– TOP VIEW –


14
13
12
11
10
9
8
Vcc
(+5V)
GND
1
2
3
4
5
6
7



$Y = A \cdot B \cdot C = \overline{\overline{A}+\overline{B}+\overline{C}}$

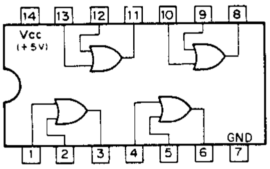
A	B	C	Y
0	0	0	0
0	0	1	0
0	1	0	0
0	1	1	0
1	0	0	0
1	0	1	0
1	1	0	0
1	1	1	1

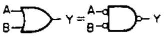
0;LOW LEVEL
1;HIGH LEVEL

74F32PC (FSC)

TTL 2-INPUT POSITIVE-OR GATE

– TOP VIEW –


14
13
12
11
10
9
8
Vcc
(+5V)
GND
1
2
3
4
5
6
7

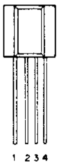


$Y = A + B = \overline{\overline{A} \cdot \overline{B}}$

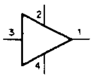
A	B	Y
0	0	0
0	1	1
1	0	1
1	1	1

0:LOW LEVEL
1:HIGH LEVEL

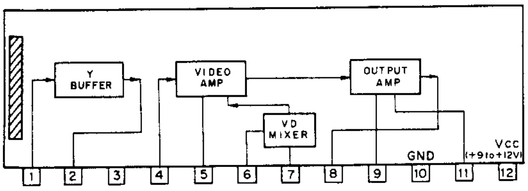
AN607P (MATSUSHITA)
WIDE BAND AMPLIFIER
— PRINTED SIDE VIEW —



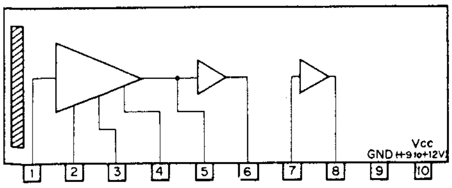
1: OUTPUT
2: Vcc (+12V)
3: INPUT
4: GND



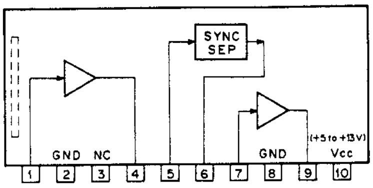
BX388L (ROHM)
VIDEO AMP/VD MIXER
— PRINTED SIDE —


Y
BUFFER
VIDEO
AMP
OUTPUT
AMP
VD
MIXER
GND
Vcc
(+9 to +12V)
1
2
3
4
5
6
7
8
9
10
11
12

BX389L (ROHM)
VIDEO AMPLIFIER
— PRINTED SIDE —


Vcc
GND (+9 to +12V)
1
2
3
4
5
6
7
8
9
10

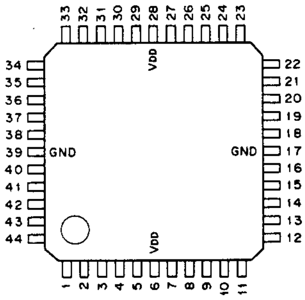
BX3915A (SONY)
SYNC SEPARATOR
— PRINTED SIDE —


SYNC
SEP
GND NC
GND
(+5 to +13V)
Vcc
1
2
3
4
5
6
7
8
9
10

CF77309FR (TI)

C-MOS TIMING GENERATOR FOR 8mm VTR ADDRESS SYSTEM

– TOP VIEW –


33
32
31
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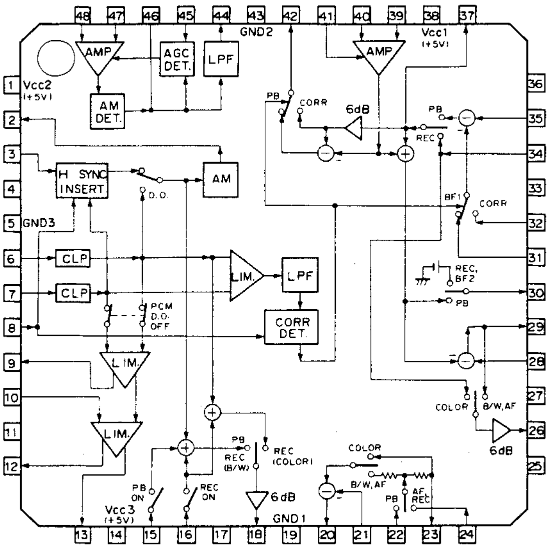
29
28
27
26
25
24
23
34
35
36
37
38
39
40
41
42
43
44
22
21
20
19
18
17
16
15
14
13
12
VDD
GND
GND
VDD
1
2
3
4
5
6
7
8
9
10
11

(VDD = +5V)

PIN NO.	I/O	SIGNAL	PIN NO.	I/O	SIGANL	PIN NO.	I/O	SYGNAL	PIN NO.	I/O	SYGNAL
1	I	IEAR	12	I	CSMT	23	O	LCLK	34	I	RAMP
2	O	SIEAR	13	I	CRCMON1	24	O	SW POS	35	O	S RAMP
3	I	RFMDZ	14	I	FMCK	25	I	CAM/$\overline{\text{DECK}}$	36	I	RAREA
4	O	S RFMD	15	I	P1/$\overline{\text{P2}}$	26	I	MODE	37	O	S RARE
5	I	RFAR	16	I	AUTO	27	I	WRITE	38	I	DRSWP
6	–	VDD	17	–	GND	28	–	VDD	39	–	GND
7	O	S RFAR	18	I	MCLK1	29	I	$\overline{\text{RESET}}$	40	O	S DRSWP
8	I	FERA	19	O	MCLK2	30	I	RFSWP	41	I	MDAR
9	O	S FERA	20	I	SREF	31	O	OUT CNT	42	O	S MDAR
10	I	FERS	21	O	PCO	32	O	$\overline{\text{SET 1}}$	43	I	TEST 1
11	O	S FERS	22	I	NTSC/$\overline{\text{PAL}}$	33	O	SET1010	44	I	TEST 2

CX20031 (SONY) FLAT PACKAGE
Y/C SEPARATION COMB FILTER
- TOP VIEW -


GND2
Vcc1 (+5V)
AMP
AGC DET.
LPF
AMP
Vcc2 (+5V)
AM DET.
PB
CORR
6dB
PB
REC
H SYNC INSERT
AM
D.O.
BF1
CORR
GND3
CLP
CLP
LIM.
LPF
REC, BF2
PB
PCM
D.O. OFF
CORR DET.
LIM.
LIM.
COLOR
B/W, AF
PB
REC (B/W)
REC (COLOR)
COLOR
6dB
PB ON
REC ON
B/W, AF
Vcc3 (+5V)
6dB
GND1
PB
AF, REC

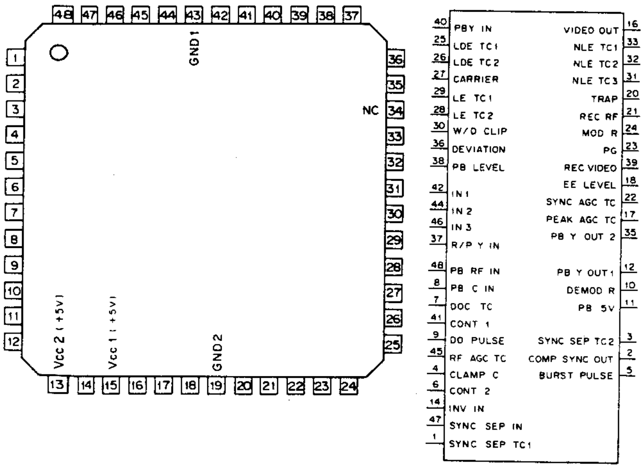
PIN No.	PIN NAME
1	Vcc2
2	AM OUT
3	HD IN
4	XTAL
5	GND3
6	YD IN
7	Y IN
8	CORR ADJ
9	Y-YD OUT
10	Y-YD IN
11	PCM IN
12	LIM OUT2
13	LIM OUT1
14	Vcc3
15	PB MIX IN1
16	REC MIX IN

PIN No.	PIN NAME
17	DOP IN
18	Y OUT2
19	GND1
20	Y OUT1
21	PB MIX IN2
22	PB Y IN
23	FSC TRAP
24	REC Y IN
25	ACK IN
26	REC Y OUT
27	BF1
28	Y BPF IN
29	Y OUT3
30	CT OUT
31	CT IN2
32	CT IN1

PIN No.	PIN NAME
33	BF2
34	REC VIDEO IN
35	PB CHROMA IN
36	PB 5V IN
37	CDL OUT
38	Vcc1
39	CDL1 IN
40	CDL2 IN
41	CD ADJ
42	C OUT
43	GND2
44	YD OUT
45	YD ADJ
46	PEAK HOLD
47	YDL1 IN
48	YDL2 IN

ACK ; ACKNOWLEDGMENT
ADJ ; ADJUSTMENT
AF ; AFTER RECODING
AGC ; AUTOMATIC GAIN CONTROL
AM ; AMPLITUDE MODULATION
AMP ; AMPLIFIER
BF ; BURST FLAG
BPF ; BAND PASS FILTER
C ; CHROMA
CD ; DEFERED C
CDL ; C DELAY LINE
CLP ; CLAMP
CORR; CORRELATION
CT ; C CROSSTALK
DET ; DETECTOR
DOP ; DROP-OUT
D.O ; DROP-OUT
FSC ; FREQUENCY OF SUB-CARRIER
GND ; GROUND
H ; HORIZONTAL
HD ; H DRIVE PULSE
IN ; INPUT
LIM ; LIMITER
LPF ; LOW PASS FILTER
MIX ; MIXER
OUT ; OUTPUT
PB ; PLAYBACK
PCM ; PULSE CODE MODULATION
REC ; RECORDING
SYNC; SYNCHRONIZATION
Vcc ; POWER
XTAL; CRYSTAL
Y ; LUMINANCE
YD ; DEFERRED Y
YDL ; Y DELAY LINE

CX20030 (SONY) FLAT PACKAGE
VIDEO Y SIGNAL PROCESSOR
- TOP VIEW -

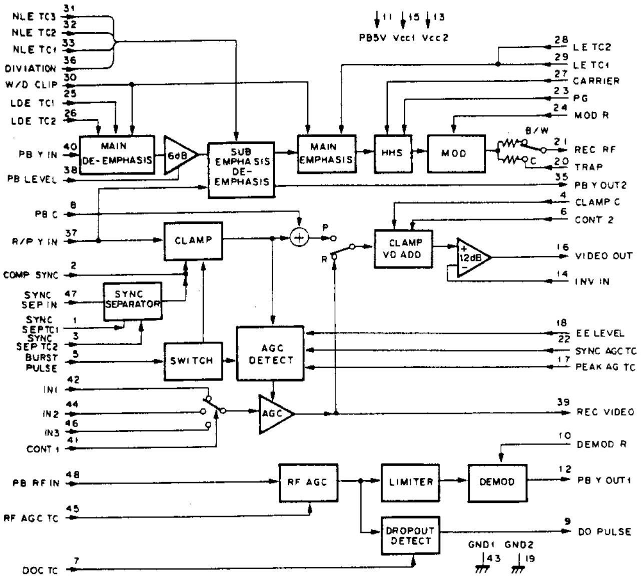

GND1
NC
Vcc 2 (+5V)
Vcc 1 (+5V)
GND2
40 PBY IN
25 LDE TC1
26 LDE TC2
27 CARRIER
29 LE TC1
28 LE TC2
30 W/D CLIP
36 DEVIATION
38 PB LEVEL
42 IN 1
44 IN 2
46 IN 3
37 R/P Y IN
48 PB RF IN
8 PB C IN
7 DOC TC
41 CONT 1
9 DO PULSE
45 RF AGC TC
4 CLAMP C
6 CONT 2
14 INV IN
47 SYNC SEP IN
1 SYNC SEP TC1
VIDEO OUT 16
NLE TC1 33
NLE TC2 32
NLE TC3 31
TRAP 20
REC RF 21
MOD R 24
PG 23
REC VIDEO 39
EE LEVEL 18
SYNC AGC TC 22
PEAK AGC TC 17
PB Y OUT 2 35
PB Y OUT1 12
DEMOD R 10
PB 5V 11
SYNC SEP TC2 3
COMP SYNC OUT 2
BURST PULSE 5

(V_{DD} = + 5V)

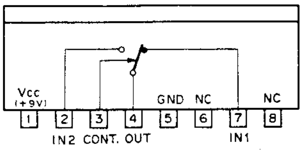
PIN NO	I/O	SYMBOL	PIN NO.	I/O	SYMBOL	PIN NO.	I/O	SYMBOL
1	I	SYNC SEP TC1	17	I	PEAK AGC TC	33	I	NLE TC1
2	O	COMP SYNC	18	I	EE LEVEL	34	–	NC
3	I	SYNC SEP TC2	19	–	GND2	35	O	PB Y OUT2
4	I	CLAMP C	20	I	TRAP	36	I	DEVIATION
5	I	BURST PULSE	21	O	REC RF	37	I	R/P Y IN
6	I	CONT2	22	I	SYNC AGC TC	38	I	PB LEVEL
7	I	DOC TC	23	I	PG	39	O	REC VIDEO
8	I	PB C	24	I	MOD R	40	I	PB Y IN
9	O	DO PULSE	25	I	LDE TC1	41	I	CONT1
10	I	DEMOD R	26	I	LDE TC2	42	I	IN1
11	I	PB 5V	27	I	CARRIER	43	–	GND1
12	O	PB Y OUT1	28	I	LE TC2	44	I	IN2
13	–	Vcc2	29	I	LE TC1	45	I	RF AGC TC
14	I	INV IN	30	I	W/D CLIP	46	I	IN3
15	–	Vcc1	31	I	NLE TC3	47	I	SYNC SEP IN
16	O	VIDEO OUT	32	I	NLE TC2	48	I	PB RF IN

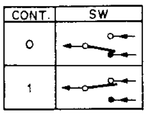
INPUT
BURST PULSE : BURST PULSE INPUT
CARRIER : FM MODULATOR CARRIER CONTROL INPUT
CLAMP C : EXTERNAL CAPACITOR FOR CLAMPING INPUT
CONT 1 : INTERNAL SWITCH CONTROL INPUT
CONT 2 : MUTING AND VD-ADD CONTROL INPUT
DEMOD R : EXTERNAL RESISTOR FOR FM DEMODULATOR INPUT
DEVIATION : DEVIATION CONTROL INPUT
DOC TC : EXTERNAL CAPACITOR FOR DROPOUT DETECTION INPUT
EE LEVEL : SYNC AGC CONTROL INPUT
IN 1 – IN 3 : RECORDING VIDEO SIGNAL INPUTS
INV IN : INVERTING INPUT FOR VIDEO CIRCUIT
LDE TC1.TC2 : EXTERNAL RESISTOR FOR LINEAR DE-EMPHASIS INPUTS
LE TC1.TC2 : EXTERNAL CR FOR LINEAR EMPHASIS INPUTS
MOD R : EXTERNAL RESISTOR FOR FM MODULATOR INPUT
NLE TC1 – NLE TC3
: EXTERNAL CAPACITOR FOR NON-LINEAR EMPHASIS INPUTS
PB 5V : POWER FOR PLAYBACK SYSTEM INPUT
PB C : PB CHROMA INPUT AND M/C CONTROL INPUT
PB LEVEL : PB Y OUT2 SIGNAL CONTROL INPUT
PB RF IN : PB RF (FM) INPUT
PB Y IN : PB Y SIGNAL FOR DE-EMPHASIS INPUT
PEAK AGC TC : EXTERNAL CR INPUT FOR PEAK AGC
PG : PG (30Hz) SIGNAL INPUT
RF AGC TC : EXTERNAL CR FOR RF AGC INPUT
R/P Y IN : Y SIGNAL FOR CLAMPING INPUT
SYNC AGC TC : EXTERNAL CR INPUT FOR SYNC AGC
SYNC SEP IN : SYNC SEPARATION SIGNAL INPUT
SYNC SEP TC1,TC2
: EXTERNAL CR INPUT FOR SYNC SEPARATION
TRAP : TRAP INPUT
W/D CLIP : LINEAR EMPHASIS AND W/D CLIP CONTROL INPUT

OUTPUT
COMP SYNC : COMPOSITE SYNC OUTPUT
DO PULSE : DROPOUT PULSE OUTPUT
PB Y OUT1 : FREQUENCY DEMODULATOR OUTPUT
PB Y OUT2 : PB Y OUTPUT
REC RF : Y-FM SIGNAL OUTPUT
REC VIDEO : AMPLIFIED Y SIGNAL OUTPUT
VIDEO OUT : VIDEO OUTPUT


NLE TC3 31
NLE TC2 32
NLE TC1 33
DIVIATION 36
W/D CLIP 30
LDE TC1 25
LDE TC2 26
PB Y IN 40
PB LEVEL 38
PB C 8
R/P Y IN 37
COMP SYNC 2
SYNC SEP IN 47
SYNC SEP TC1 1
SYNC SEP TC2 3
BURST PULSE 5
IN1 42
IN2 44
IN3 46
CONT 1 41
PB RF IN 48
RF AGC TC 45
DOC TC 7
11 15 13
PB5V Vcc1 Vcc2
28 LE TC2
29 LE TC1
27 CARRIER
23 PG
24 MOD R
B/W
21 REC RF
20 TRAP
35 PB Y OUT2
4 CLAMP C
6 CONT 2
16 VIDEO OUT
14 INV IN
18 EE LEVEL
22 SYNC AGC TC
17 PEAK AG TC
39 REC VIDEO
10 DEMOD R
12 PB Y OUT1
9 DO PULSE
GND1 43
GND2 19
MAIN DE-EMPHASIS
6dB
SUB EMPHASIS DE-EMPHASIS
MAIN EMPHASIS
HHS
MOD
CLAMP
P
R
CLAMP VD ADD
12dB
SYNC SEPARATOR
SWITCH
AGC DETECT
AGC
RF AGC
LIMITER
DEMOD
DROPOUT DETECT

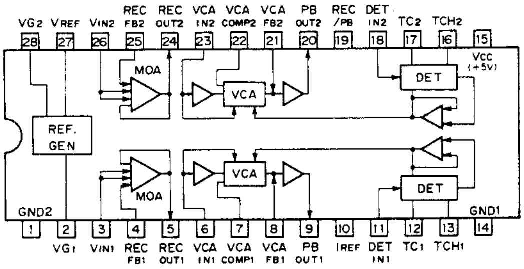
CX20061 (SONY)
ANALOG SWITCH
— SIDE VIEW —


Vcc (+9V)
GND
NC
NC
1 2 3 4 5 6 7 8
IN2 CONT. OUT
IN1



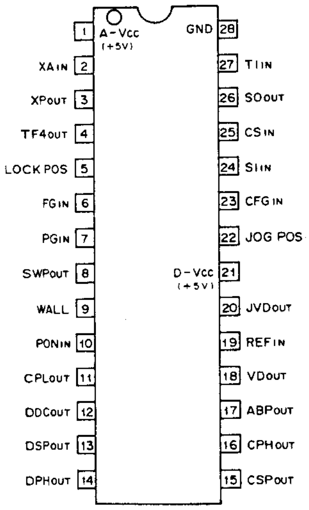
0 ; LOW LEVEL
1 ; HIGH LEVEL

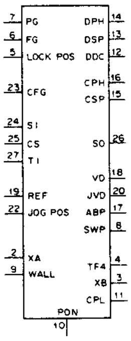
CX20099 (SONY) FLAT PACKAGE
VOLTAGE CONTROLLED AMP/DETECTOR/MAIN OPERATIONAL AMP
— TOP VIEW —


VG2 28
VREF 27
VIN2 26
REC FB2 25
REC OUT2 24
VCA IN2 23
VCA COMP2 22
VCA FB2 21
PB OUT2 20
REC /PB 19
DET IN2 18
TC2 17
TCH2 16
15
Vcc (+5V)
MOA
VCA
DET
REF. GEN
GND2
GND1
1
2 VG1
3 VIN1
4 REC FB1
5 REC OUT1
6 VCA IN1
7 VCA COMP1
8 VCA FB1
9 PB OUT1
10 IREF
11 DET IN1
12 TC1
13 TCH1
14

DET ; DETECTOR
TC ; TIME CONSTANT
TCH ; TIME CONSTANT HOLD
VCA ; VOLTAGE CONTROLLED AMP

CX20035 (SONY) FLAT PACKAGE
DRUM/CAPSTAN SERVO CONTROLLER
– TOP VIEW –


1 A-Vcc (+5V)
XAIN 2
XPOUT 3
TF4OUT 4
LOCK POS 5
FGIN 6
PGIN 7
SWPOUT 8
WALL 9
PONIN 10
CPLOUT 11
DDCOUT 12
DSPOUT 13
DPHOUT 14
GND 28
27 TIIN
26 SOOUT
25 CSIN
24 SIIN
23 CFGIN
22 JOG POS
D-Vcc (+5V) 21
20 JVDOUT
19 REFIN
18 VDOUT
17 ABPOUT
16 CPHOUT
15 CSPOUT


7 PG
6 FG
5 LOCK POS
23 CFG
24 SI
25 CS
27 TI
19 REF
22 JOG POS
2 XA
9 WALL
DPH 14
DSP 13
DDC 12
CPH 16
CSP 15
SO 26
VD 18
JVD 20
ABP 17
SWP 8
TF4 4
XB 3
CPL 11
PON 10

INPUT

CFG	: CAPSTAN FG INPUT
CS	: SYSCON INTERFACE
FG	: DRUM FG INPUT
PG	: DRUM PG INPUT
PON	: POWER ON INPUT
REF IN	: REF VOLTAGE INPUT
SI	: SYSCON INTERFACE
TI	: SYSCON INTERFACE
XA	: SUBCARRIER INPUT OR X'TAL

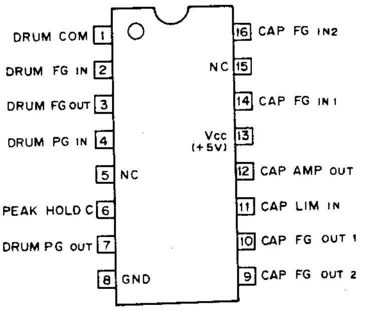
OUTPUT

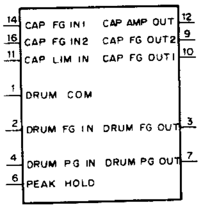
ABP	: 60/50Hz TIMING OUTPUT
CPH	: CAPSTAN PHASE ERROR OUTPUT
CPL	: CAPSTAN PHASE LATCH OUTPUT
CSP	: CAPSTAN SPEED ERROR OUTPUT
DDC	: DRUM PHASE DC ERROR OUTPUT
DPH	: DRUM PHASE ERROR OUTPUT
DSP	: DRUM SPEED ERROR OUTPUT
JVD	: FALSE VD OUTPUT
SO	: SYSCON INTERFACE
SWP	: SWITCHING PULSE OUTPUT
TF4	: SYSTEM CLOCK OUTPUT 1/32fsc
VD	: VD OUTPUT
XB	: X'TAL

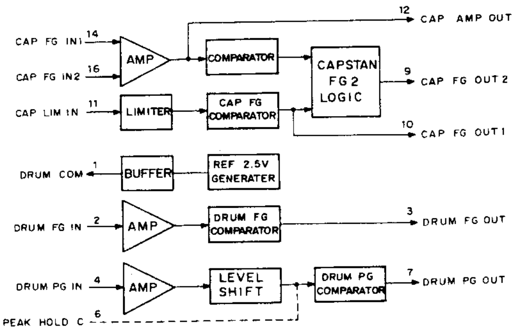
OTHERS

LOCK POS	: EXTERNAL CR
JOG POS	: EXTERNAL CR
WALL	: I²L WALL BIAS

CX20115A (SONY) FLAT PACKAGE
MOTOR SENSE AMP
– TOP VIEW –


DRUM COM 1
DRUM FG IN 2
DRUM FG OUT 3
DRUM PG IN 4
5 NC
PEAK HOLD C 6
DRUM PG OUT 7
8 GND
16 CAP FG IN2
NC 15
14 CAP FG IN1
Vcc (+5V) 13
12 CAP AMP OUT
11 CAP LIM IN
10 CAP FG OUT 1
9 CAP FG OUT 2

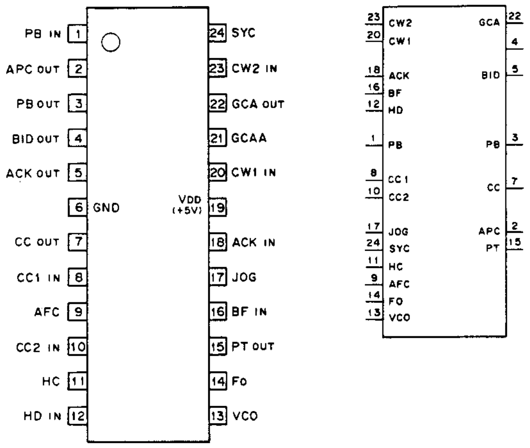

14 CAP FG IN1
16 CAP FG IN2
11 CAP LIM IN
1 DRUM COM
2 DRUM FG IN
4 DRUM PG IN
6 PEAK HOLD
CAP AMP OUT 12
CAP FG OUT2 9
CAP FG OUT1 10
DRUM FG OUT 3
DRUM PG OUT 7


12 CAP AMP OUT
CAP FG IN1 14
CAP FG IN2 16
CAP LIM IN 11
AMP
COMPARATOR
LIMITER
CAP FG COMPARATOR
CAPSTAN FG2 LOGIC
9 CAP FG OUT 2
10 CAP FG OUT 1
DRUM COM 1
BUFFER
REF 2.5V GENERATER
DRUM FG IN 2
AMP
DRUM FG COMPARATOR
3 DRUM FG OUT
DRUM PG IN 4
AMP
LEVEL SHIFT
DRUM PG COMPARATOR
7 DRUM PG OUT
PEAK HOLD C 6

CX20117 (SONY) FLAT PACKAGE

C-MOS PAL-COLOR ALIGNMENT COMPENSATOR

– TOP VIEW –


PB IN 1
APC OUT 2
PB OUT 3
BID OUT 4
ACK OUT 5
6 GND
CC OUT 7
CC1 IN 8
AFC 9
CC2 IN 10
HC 11
HD IN 12
24 SYC
23 CW2 IN
22 GCA OUT
21 GCAA
20 CW1 IN
VDD (+5V) 19
18 ACK IN
17 JOG
16 BF IN
15 PT OUT
14 Fo
13 VCO
23 CW2
20 CW1
18 ACK
16 BF
12 HD
1 PB
8 CC1
10 CC2
17 JOG
24 SYC
11 HC
9 AFC
14 FO
13 VCO
GCA 22
4
BID 5
PB 3
CC 7
APC 2
PT 15

INPUT

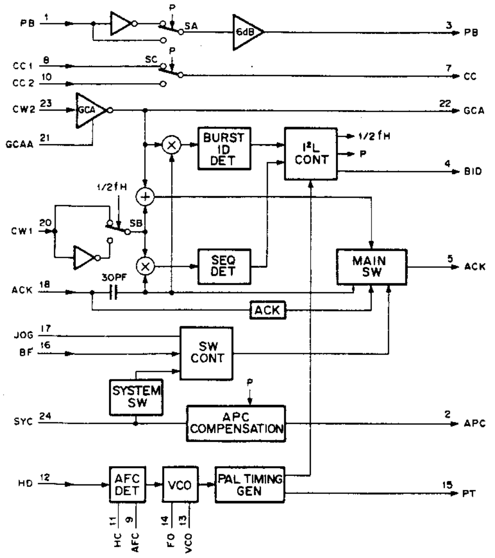
ACK	; ACK CHROMA SIGNAL
BF	; BURST FLAG
CW1	; 4.43 MHz (REF – 90°)
CW2	; REF 4.43 MHz
HD	; HORIZONTAL DRIVE
PB	; PLAYBACK CHROMA SIGNAL
CC1	; CONVERTED CARRIER (3.70 MHz)
CC2	; CONVERTED CARRIER (5.17 MHz)

OTHERS

AFC	; AFC LPF
GCAA	; REF AMP GAIN ADJ
Fo	; VCO FREQUENCY ADJ
HC	; HOLD CAPACITOR
JOG	; REC/PB/JOG SELECT
SYC	; SYSTEM CONTROL
VCO	; VCO CAPACITOR

OUTPUT

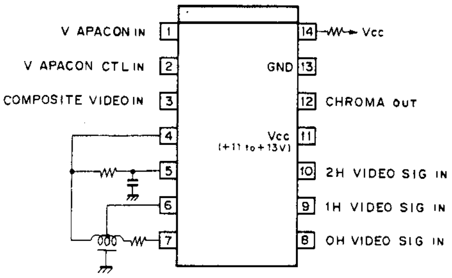
ACK	; ACK CHROMA SIGNAL
APC	; APC COMPENSATION
BID	; BURST ID
GCA	; REF (4.43 MHz) AMP
PB	; PLAYBACK CHROMA SIGNAL
PT	; PAL TIMING
CC	; CONDERTED CARRIER OTHERS

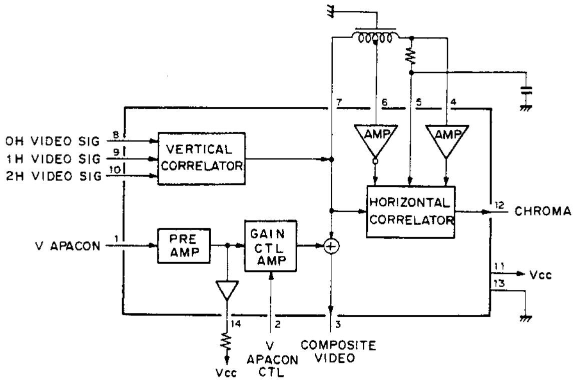

PB 1
P
SA
6dB
3 PB
CC1 8
CC2 10
SC
7 CC
CW2 23
GCA
22 GCA
GCAA 21
BURST ID DET
I²L CONT
1/2fH
P
4 BID
1/2fH
CW1 20
SB
SEQ DET
MAIN SW
5 ACK
ACK 18
30PF
ACK
JOG 17
BF 16
SW CONT
SYSTEM SW
P
SYC 24
APC COMPENSATION
2 APC
HD 12
AFC DET
VCO
PAL TIMING GEN
15 PT
11 HC
9 AFC
14 FO
13 VCO

CX22013 (SONY)

DYNAMIC COMB FILTER

– TOP VIEW –

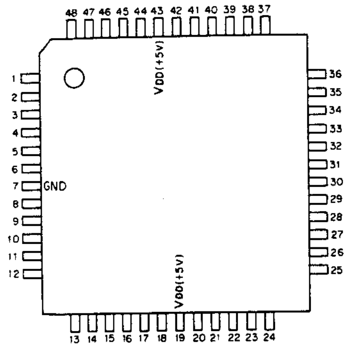

V APACON IN 1
V APACON CTL IN 2
COMPOSITE VIDEO IN 3
4
5
6
7
14 Vcc
GND 13
12 CHROMA OUT
Vcc (+11 to +13V) 11
10 2H VIDEO SIG IN
9 1H VIDEO SIG IN
8 0H VIDEO SIG IN


7
6
5
4
AMP
AMP
0H VIDEO SIG 8
1H VIDEO SIG 9
2H VIDEO SIG 10
VERTICAL CORRELATOR
HORIZONTAL CORRELATOR
12 CHROMA
V APACON 1
PRE AMP
GAIN CTL AMP
11 Vcc
13
14
2
3
Vcc
V APACON CTL
COMPOSITE VIDEO

CX23011 (SONY) FLAT PACKAGE

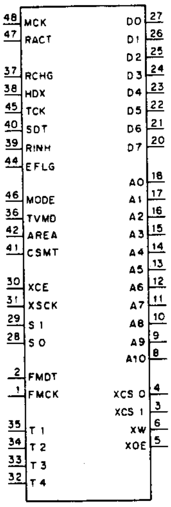
C-MOS PCM AUDIO SIGNAL PROCESSOR

– TOP VIEW –


48 47 46 45 44 43 42 41 40 39 38 37
1
2
3
4
5
6
7
8
9
10
11
12
GND
VDD(+5V)
VDD(+5V)
36
35
34
33
32
31
30
29
28
27
26
25
13 14 15 16 17 18 19 20 21 22 23 24

(VDD = + 5V)

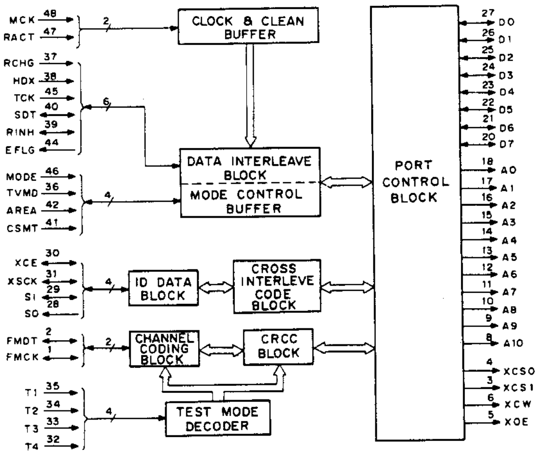
PIN NO.	I/O	SYMBOL	PIN NO.	I/O	SYMBOL
1	I/O	FMCK	25	I/O	D2
2	I/O	FMDT	26	I/O	D1
3	O	XCS1	27	I/O	D0
4	O	XCS0	28	O	S0
5	O	XOE	29	I/O	S1
6	O	XW	30	I/O	XCE
7	–	GND	31	I/O	XSCK
8	O	A10	32	I	T4
9	O	A9	33	I	T3
10	O	A8	34	I	T2
11	O	A7	35	I	T1
12	O	A6	36	I	TVMD
13	O	A5	37	I	RCHG
14	O	A4	38	I	HDX
15	O	A3	39	I/O	RINH
16	O	A2	40	I/O	SDT
17	O	A1	41	I/O	CSMT
18	O	A0	42	I	AREA
19	–	VDD	43	–	VDD
20	I/O	D7	44	O	EFLG
21	I/O	D6	45	I	TCK
22	I/O	D5	46	I	MODE
23	I/O	D4	47	I	RACT
24	I/O	D3	48	I	MCK


48 MCK
47 RACT
37 RCHG
38 HDX
45 TCK
40 SDT
39 RINH
44 EFLG
46 MODE
36 TVMD
42 AREA
41 CSMT
30 XCE
31 XSCK
29 S1
28 S0
2 FMDT
1 FMCK
35 T1
34 T2
33 T3
32 T4
D0 27
D1 26
D2 25
D3 24
D4 23
D5 22
D6 21
D7 20
A0 18
A1 17
A2 16
A3 15
A4 14
A5 13
A6 12
A7 11
A8 10
A9 9
A10 8
XCS 0 4
XCS 1 3
XW 6
XOE 5

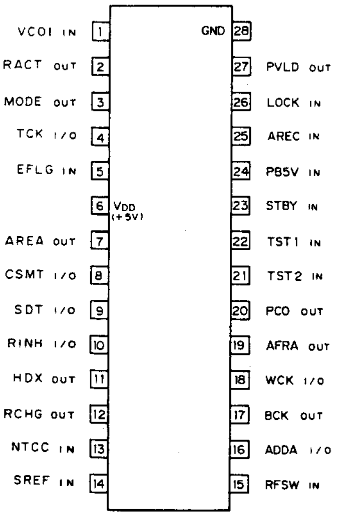
INPUT
AREA : PCM AREA SIGNAL INPUT TERMINAL
HDX : TIMING CLOCK TO TRANSPORT DATA TO CX23012
MCK : NTSC/CCIR CLOCK INPUT
MODE : REC/PB CONTROL SIGNAL INPUT TERMINAL OF ALL PCM
RACT : START/STOP CONTROL INPUT OF CX23012
RCHG : SELECT TWO 16K-RAM USING ON TBC OR ERROR CORRECTION
TCK : TIMING CLOCK TO TRANSPORT DATA TO CX23012
TVMD : NTSC/CCIR STATUS SIGNAL INPUT
T1 – T4 : TEST MODE INPUTS

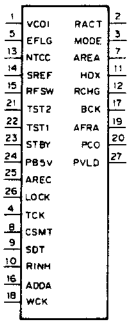
OUTPUT
A0 – A10 : RAM ADDRESS OUTPUTS
EFLG : OUTPUT HIGH LEVEL IN CASE OF ERROR CORRECTION DISABLE
SO : ID DATA OUTPUT
XCS0.XCS1 : TWO 16K-RAM SELECT CONTROL OUTPUTS
XOE : 16K-RAM CONTROL OUTPUT
XW : 16K-RAM WRITING OUTPUT

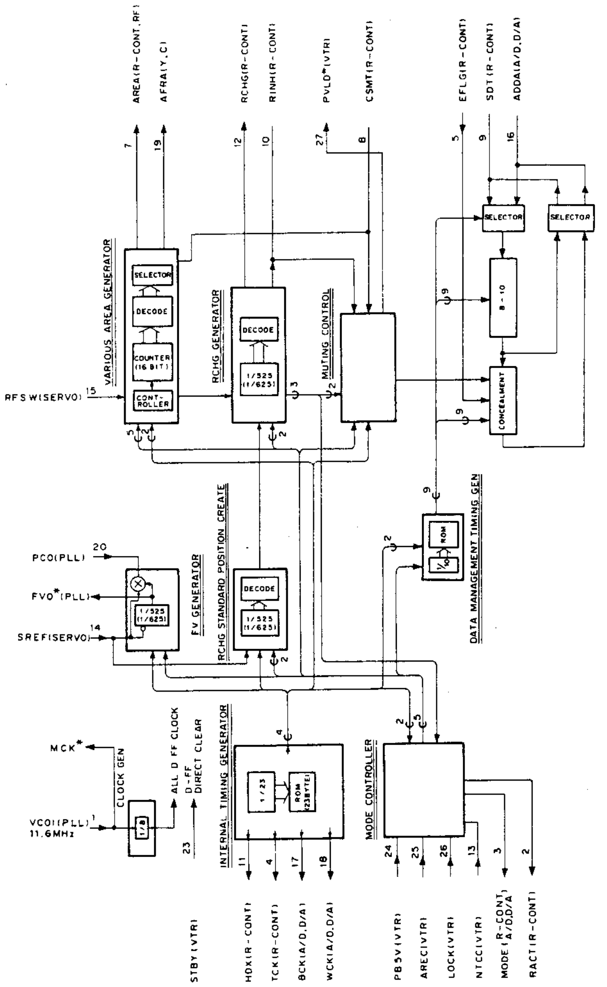
INPUT/OUTPUT
CSMT : (PB) OUTPUT HIGH LEVEL AT MUTE MODE ON CX23012
: (REC) INPUT DATA BLOCK WRITING ON HIGH LEVEL
D0 – D7 : RAM DATA INPUT/OUTPUTS
FMCK : FM CLOCK INPUT/OUTPUT
FMDT : FM DATA INPUT/OUTPUT
RINH : (PB) PROHIBIT TO TURN OVER RCHG SIGNAL
: (REC) PROHIBIT TO WRITE A/D DATA TO 16K-RAM
SDT : 8 BIT SERIAL DATA TRANSFER TERMINAL
SI : ID DATA INPUT/OUTPUT
XCE : ID DATA TRANSPORTION SIGNAL INPUT/OUTPUT
XSCK : ID DATA TRANSPORTION CLOCK INPUT/OUTPUT


MCK 48
RACT 47
RCHG 37
HDX 38
TCK 45
SDT 40
RINH 39
EFLG 44
MODE 46
TVMD 36
AREA 42
CSMT 41
XCE 30
XSCK 31
SI 29
SO 28
FMDT 2
FMCK 1
T1 35
T2 34
T3 33
T4 32
2
6
4
4
2
4
CLOCK & CLEAN BUFFER
DATA INTERLEAVE BLOCK
MODE CONTROL BUFFER
ID DATA BLOCK
CROSS INTERLEVE CODE BLOCK
CHANNEL CODING BLOCK
CRCC BLOCK
TEST MODE DECODER
PORT CONTROL BLOCK
27 D0
26 D1
25 D2
24 D3
23 D4
22 D5
21 D6
20 D7
18 A0
17 A1
16 A2
15 A3
14 A4
13 A5
12 A6
11 A7
10 A8
9 A9
8 A10
4 XCS0
3 XCS1
6 XCW
5 XOE

CX23012 (SONY) FLAT PACKAGE
C-MOS PCM AUDIO SIGNAL PROCESSOR
— TOP VIEW —

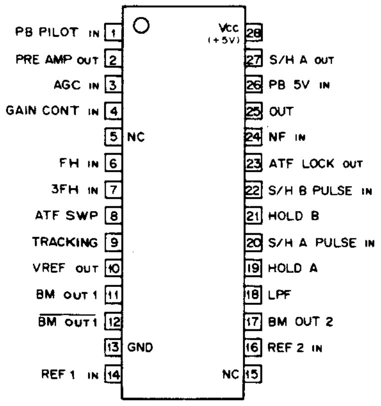

VCOI IN 1
RACT OUT 2
MODE OUT 3
TCK I/O 4
EFLG IN 5
6 VDD (+5V)
AREA OUT 7
CSMT I/O 8
SDT I/O 9
RINH I/O 10
HDX OUT 11
RCHG OUT 12
NTCC IN 13
SREF IN 14
GND 28
27 PVLD OUT
26 LOCK IN
25 AREC IN
24 PB5V IN
23 STBY IN
22 TST1 IN
21 TST2 IN
20 PCO OUT
19 AFRA OUT
18 WCK I/O
17 BCK OUT
16 ADDA I/O
15 RFSW IN

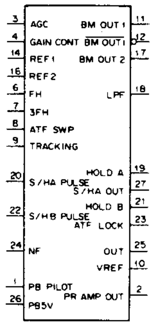

VCOI
EFLG
NTCC
SREF
RFSW
TST2
TST1
STBY
PB5V
AREC
LOCK
TCK
CSMT
SDT
RINH
ADDA
WCK
RACT
MODE
AREA
HDX
RCHG
BCK
AFRA
PCO
PVLD

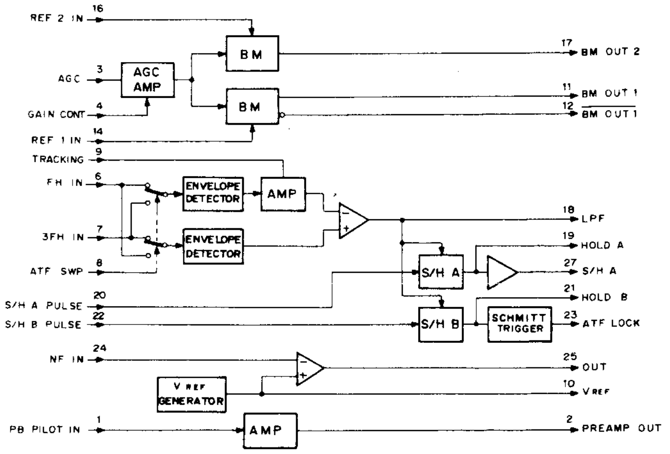

AREA(R-CONT,RF)
AFRA(Y,C)
RCHG(R-CONT)
RINH(R-CONT)
PVLD*(VTR)
CSMT(R-CONT)
EFLG(R-CONT)
SDT(R-CONT)
ADDA(A/D,D/A)
SELECTOR
SELECTOR
SELECTOR
DECODE
COUNTER (16 BIT)
CONTROLLER
VARIOUS AREA GENERATOR
RCHG GENERATOR
DECODE
1/525 (1/625)
MUTING CONTROL
8-10
CONCEALMENT
RFSW(SERVO)
PCO(PLL)
FVO*(PLL)
SREF(SERVO)
FV GENERATOR
RCHG STANDARD POSITION CREATE
DECODE
1/525 (1/625)
ROM
DATA MANAGEMENT TIMING GEN
MCK*
CLOCK GEN
VCOI(PLL) 11.6MHz
1/8
ALL D FF CLOCK
D-FF DIRECT CLEAR
INTERNAL TIMING GENERATOR
1/23
ROM
MODE CONTROLLER
STBY(VTR)
HDX(R-CONT)
TCK(R-CONT)
BCK(A/D,D/A)
WCK(A/D,D/A)
PB5V(VTR)
AREC(VTR)
LOCK(VTR)
NTCC(VTR)
MODE(R-CONT, A/D,D/A)
RACT(R-CONT)

ADDA ; TRANSFER TERMINAL OF 10 BIT SERIAL DATA
AFRA ; AREA SIGNAL OUTPUT TERMINAL AT AFTER REC
AREA ; PCM AREA SIGNAL OUTPUT TERMINAL
AREC ; AFTER REC CONTROL SIGNAL
CSMT ; (PB) OUTPUT "H" LEVEL AT MUTE MODE ON CX23011
(REC) OUTPUT DATA BLOCK WRITING ON "H" LEVEL
EFLG ; OUTPUT "H" LEVEL IN CASE OF ERROR CORRECTION DISABLE
HDX ; TIMING CLOCK TO TRANSPORT DATA TO CX23011
LOCK ; APPOINT TO START OR STOP PCM SYSTEM
MODE ; REC/PB CONTROL SIGNAL OUTPUT TERMINAL OF ALL PCM
NTCC ; "H" ; NTSC MODE/"L" ; CCIR MODE
PB5V ; REC/PB CONTROL SIGNAL
PCO ; COMPARE fv AND SREF'S PHASE
PVLD ; INDICATE PCM DATA ON THE TAPE
RACT ; START/STOP CONTROL OUTPUT OF CX23011
RCHG ; SELECT TWO 16K RAM USING ON TBC OR ERROR CORRECTION
RFSW ; RF SWITCHING PULSE INPUT TERMINAL
RINH ; (PB) PROHIBIT TO TURN OVER RCHG SIGNAL
(REC) PROHIBIT TO WRITE A/D DATA TO 16K-RAM
SDT ; 8 BIT SERIAL DATA TRANSFAR TERMINAL
SREF ; TIMING SIGNAL INPUT TERMINAL OF PCM
STBY ; INITIALIZE AND POWER SAVE MODE TERMINAL OF PCM
TCK ; TIMING CLOCK TO TRANSPORT DATA TO CX23011
TST1/2 ; TEST MODE CONTROL TERMINAL 1/2
VCOI ; CLOCK INPUT TERMINAL
WCK ; TIMING CLOCK TO TRANSPORT DATA TO A/D, DIA CONVERTER

CXA1042M (SONY) FLAT PACKAGE
AUTOMATIC TRACKING SENSOR
– TOP VIEW –


PB PILOT IN 1
PRE AMP OUT 2
AGC IN 3
GAIN CONT IN 4
5 NC
FH IN 6
3FH IN 7
ATF SWP 8
TRACKING 9
VREF OUT 10
BM OUT1 11
BM OUT1 12
13 GND
REF 1 IN 14
Vcc (+5V) 28
27 S/H A OUT
26 PB 5V IN
25 OUT
24 NF IN
23 ATF LOCK OUT
22 S/H B PULSE IN
21 HOLD B
20 S/H A PULSE IN
19 HOLD A
18 LPF
17 BM OUT 2
16 REF 2 IN
NC 15


AGC
GAIN CONT
REF1
REF2
FH
3FH
ATF SWP
TRACKING
S/HA PULSE
S/HB PULSE
NF
PB PILOT
PB5V
BM OUT1
BM OUT1
BM OUT 2
LPF
HOLD A
S/HA OUT
HOLD B
ATF LOCK
OUT
VREF
PR AMP OUT


REF 2 IN
AGC
AGC AMP
GAIN CONT
REF 1 IN
TRACKING
FH IN
3FH IN
ATF SWP
S/H A PULSE
S/H B PULSE
NF IN
PB PILOT IN
BM
BM
ENVELOPE DETECTOR
ENVELOPE DETECTOR
AMP
S/H A
S/H B
SCHMITT TRIGGER
V REF GENERATOR
AMP
BM OUT 2
BM OUT 1
BM OUT1
LPF
HOLD A
S/H A
HOLD B
ATF LOCK
OUT
VREF
PREAMP OUT

INPUT
3FH IN : 47KHz BPF SIGNAL INPUT
AGC IN : AGC INPUT
FH IN : 16KHz BPF SIGNAL INPUT
GAIN CONT : AGC CONTROL INPUT
NF IN : OP AMP NEGATIVE PHASE INPUT
PB 5V : REC/PB CHANGE SIGNAL INPUT
PB PILOT IN : PB PILOT SIGNAL INPUT
REF 1 IN : MULTIPLIER'S REF PILOT SIGNAL INPUT
REF 2 IN : MULTIPLIER'S REF PILOT SIGNAL INPUT
S/H A PULSE : S/H TIMING SIGNAL INPUT

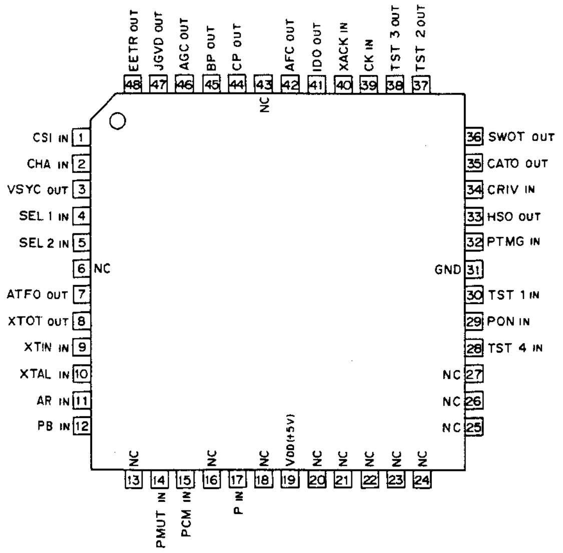
OUTPUT
ATF LOCK : LOCK DETECT SIGNAL OUTPUT
BM OUT1 : MULTIPLIER'S NEGATIVE PHASE OUTPUT
BM OUT1 : MULTIPLIER'S POSITIVE PHASE OUTPUT
BM OUT2 : MULTIPLIER'S POSITIVE PHASE OUTPUT
OUT : OP AMP POSITIVE PHASE OUTPUT
PRE AMP OUT : PRE AMP OUTPUT
S/H A OUT : SAMPLE HOLD A PULSE SIGNAL OUTPUT
V_{REF} : REF VOLTAGE OUTPUT

OTHERS
ATF SWP : SUBTRACTOR'S POLARITY CHANGE
HOLD A, B : S/H PULSE TIME CONSTANT HOLD
LPF : ENVEROPE DETECTION
TRACKING : TRACKING ADJUSTMENT

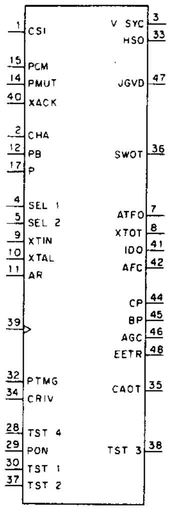
CX23054 (SONY) FLAT PACKAGE

C-MOS PCM/CHROMA SYNC PROCESSOR

– TOP VIEW –



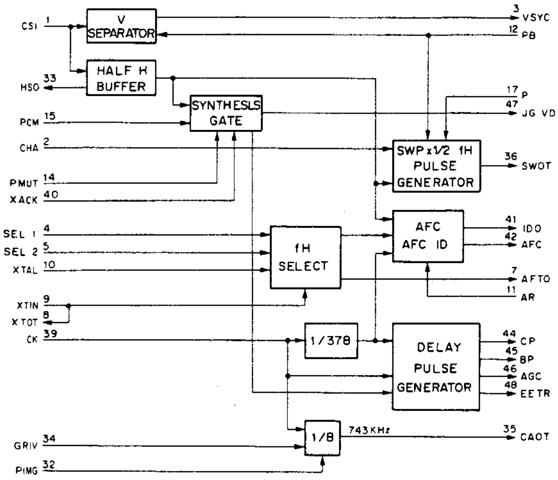
EETR OUT 48
JGVD OUT 47
AGC OUT 46
BP OUT 45
CP OUT 44
NC 43
AFC OUT 42
IDO OUT 41
XACK IN 40
CK IN 39
TST 3 OUT 38
TST 2 OUT 37
CSI IN 1
CHA IN 2
VSYC OUT 3
SEL 1 IN 4
SEL 2 IN 5
6 NC
ATFO OUT 7
XTOT OUT 8
XTIN IN 9
XTAL IN 10
AR IN 11
PB IN 12
36 SWOT OUT
35 CATO OUT
34 CRIV IN
33 HSO OUT
32 PTMG IN
GND 31
30 TST 1 IN
29 PON IN
28 TST 4 IN
NC 27
NC 26
NC 25
13 NC
14 PMUT IN
15 PCM IN
16 NC
17 P IN
18 NC
19 VDD(+5V)
20 NC
21 NC
22 NC
23 NC
24 NC



1 CSI
15 PCM
14 PMUT
40 XACK
2 CHA
12 PB
17 P
4 SEL 1
5 SEL 2
9 XTIN
10 XTAL
11 AR
39
32 PTMG
34 CRIV
28 TST 4
29 PON
30 TST 1
37 TST 2
V SYC 3
HSO 33
JGVD 47
SWOT 36
ATFO 7
XTOT 8
IDO 41
AFC 42
CP 44
BP 45
AGC 46
EETR 48
CAOT 35
TST 3 38

INPUT
AR : POST RECORDING AREA SIGNAL INPUT
CHA : RF SWITCHING PULSE INPUT
CK : MAIN CLOCK INPUT
CRIV : CHROMA CARRIER REVERSE MODE INPUT
CSI : COMPOSITE SYNC INPUT
P : PAL/NTSC MODE SELECT INPUT
PB : PB/REC MODE SELECT INPUT
PCM : EIAJ PCM MODE
PMUT : PLAY BACK MUTE MODE INPUT
PON : SYSTEM INITIALIZE INPUT
PTMG : PAL PS TIMING INPUT
SEL1.2 : ATF FREQUENCY SELECT INPUT
TST1.2.4 : TEST PIN
XACK : ACK MODE INPUT
XTAL : ATF PILOT CLOCK INPUT
XTIN : ATF PILOT GENERATOR INPUT

OUTPUT
AFC : AFC CONTROL OUTPUT
ATFO : ATF PILOT OUTPUT
AGC : SYNC CLAMP/PEDESTAL CLAMP OUTPUT
BP : BURST TRAP TIMING OUTPUT
CAOT : CHROMA CARRIER OUTPUT
CP : BURST CLOCK TIMING OUTPUT
EETR : EE TRAP OUTPUT
HSO : H SYNC OUTPUT
IDO : APC ID/AFC ID CONTROL OUTPUT
JGVD : VIRS KILLER/PMUT OUTPUT
SWOT : NTSC PI TIMING OUTPUT
TST3 : TEST PIN
VSYC : V SYNC SEPARATOR OUTPUT
XTOT : ATF PILOT GENERATOR OUTPUT

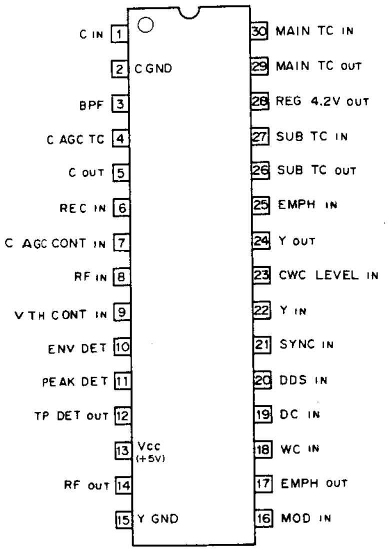


CSI 1
V SEPARATOR
3 VSYC
12 PB
HALF H BUFFER
HSO 33
PCM 15
SYNTHESLS GATE
17 P
47 JG VD
CHA 2
SWP x1/2 1H PULSE GENERATOR
36 SWOT
PMUT 14
XACK 40
SEL 1 4
SEL 2 5
XTAL 10
fH SELECT
AFC AFC ID
41 IDO
42 AFC
7 AFTO
11 AR
XTIN 9
X TOT 8
CK 39
1/378
DELAY PULSE GENERATOR
44 CP
45 BP
46 AGC
48 EETR
GRIV 34
1/8
743KHz
35 CAOT
PIMG 32

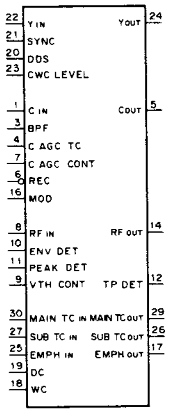
CXA1047M (SONY)

VIDEO Y/C REC PROCESSOR

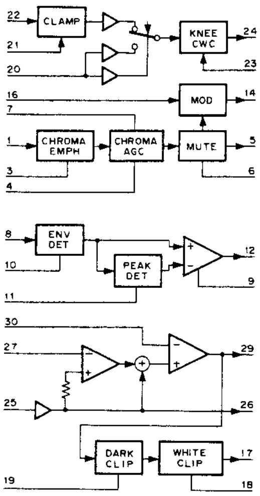
– TOP VIEW –



C IN 1
2 C GND
BPF 3
C AGC TC 4
C OUT 5
REC IN 6
C AGC CONT IN 7
RF IN 8
V TH CONT IN 9
ENV DET 10
PEAK DET 11
TP DET OUT 12
13 Vcc (+5V)
RF OUT 14
15 Y GND
30 MAIN TC IN
29 MAIN TC OUT
28 REG 4.2V OUT
27 SUB TC IN
26 SUB TC OUT
25 EMPH IN
24 Y OUT
23 CWC LEVEL IN
22 Y IN
21 SYNC IN
20 DDS IN
19 DC IN
18 WC IN
17 EMPH OUT
16 MOD IN



22 Y IN
21 SYNC
20 DDS
23 CWC LEVEL
1 C IN
3 BPF
4 C AGC TC
7 C AGC CONT
6 REC
16 MOD
8 RF IN
10 ENV DET
11 PEAK DET
9 VTH CONT
30 MAIN TC IN
27 SUB TC IN
25 EMPH IN
19 DC
18 WC
YOUT 24
COUT 5
RF OUT 14
TP DET 12
MAIN TC OUT 29
SUB TC OUT 26
EMPH OUT 17

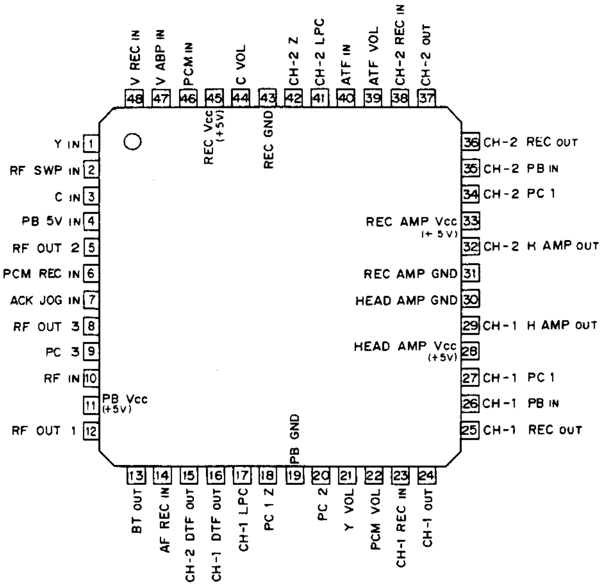


22
CLAMP
21
20
KNEE CWC
24
23
16
7
MOD
14
1
CHROMA EMPH
CHROMA AGC
MUTE
5
3
4
6
8
ENV DET
PEAK DET
12
10
9
11
30
27
29
25
26
DARK CLIP
WHITE CLIP
17
19
18

INPUT
BPF : BAND PASS FILTER
C AGC CONT : CHROMA AGC LEVEL CONTROL
C AGC TC : CHROMA AGC TIME CONSTANT
C IN : CHROMA INPUT
CWC LEVEL : CAMERA WHITE CLIP LEVEL
DC : DARK CLIP LEVEL
DDS IN : DATA DISPLAY SYSTEM INPUT
EMPH IN : EMPHASIS INPUT
ENV DET : ENVELOP DETECT TIME CONSTANT
MAIN TC IN : MAIN TIME CONSTANT INPUT
MOD IN : MODULATOR INPUT
PEAK DET : PEAK DETECT TIME CONSTANT
REC : REC/PB SWITCH
RF IN : PB RF INPUT
SUB TC IN : SUB EMPHASIS TIME CONSTANT AND LIMITER INPUT
SYNC IN : COMPOSITE SYNC INPUT
VTH CONT : ENVELOPE PEAK DETECT LEVEL CONTROL
WC : WHITE CLIP LEVEL
Y IN : Y INPUT

OUTPUT
C OUT : CHROMA OUTPUT
EMPH OUT : EMPHASIS OUTPUT
MAIN TC OUT : MAIN TIME CONSTANT OUTPUT
RF OUT : FM MODULATOR OUTPUT
SUB TC OUT : SUB EMPHASIS TIME CONSTANT
TP DET : ENVELOPE PEAK DETECT OUTPUT
Y OUT : Y (WITH DDS) OUTPUT

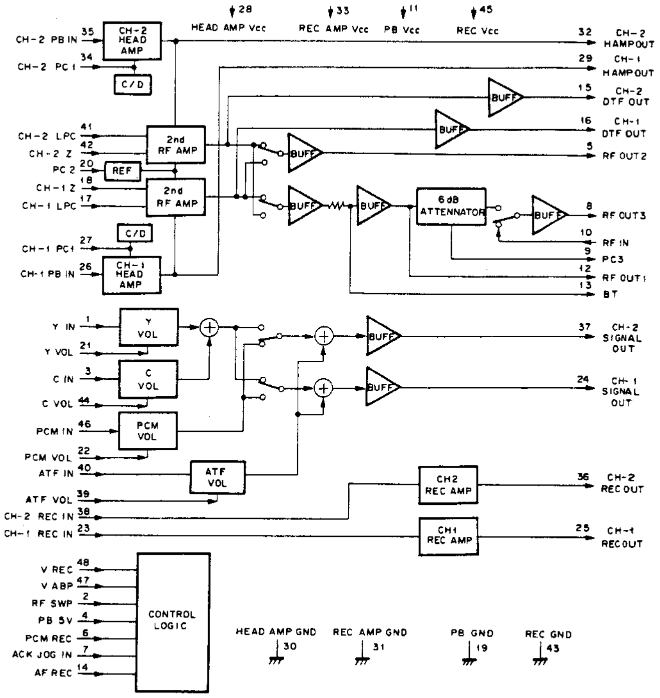
CXA1234AR (SONY) FLAT PACKAGE
VIDEO RF REC/PB AMPLIFIER
- TOP VIEW -


V REC IN 48
V ABP IN 47
PCM IN 46
45 REC Vcc (+5V)
C VOL 44
43 REC GND
CH-2 Z 42
CH-2 LPC 41
ATF IN 40
ATF VOL 39
CH-2 REC IN 38
CH-2 OUT 37
Y IN 1
RF SWP IN 2
C IN 3
PB 5V IN 4
RF OUT 2 5
PCM REC IN 6
ACK JOG IN 7
RF OUT 3 8
PC 3 9
RF IN 10
11 PB Vcc (+5V)
RF OUT 1 12
36 CH-2 REC OUT
35 CH-2 PB IN
34 CH-2 PC 1
REC AMP Vcc (+5V) 33
32 CH-2 H AMP OUT
REC AMP GND 31
HEAD AMP GND 30
29 CH-1 H AMP OUT
HEAD AMP Vcc (+5V) 28
27 CH-1 PC 1
26 CH-1 PB IN
25 CH-1 REC OUT
BT OUT 13
AF REC IN 14
CH-2 DTF OUT 15
CH-1 DTF OUT 16
CH-1 LPC 17
PC 1 Z 18
PB GND 19
PC 2 20
Y VOL 21
PCM VOL 22
CH-1 REC IN 23
CH-1 OUT 24

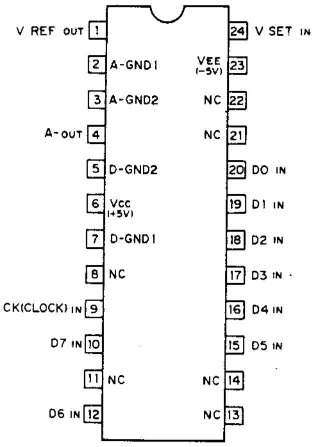
INPUT
ACK JOG IN : VIDEO/RF SELECT FOR RF OUT 3
AF REC : AFTER RECODING MODE
ATF IN : REC ATF SIGNAL INPUT
ATF VOL : REC ATF GAIN CONTROL
C IN : REC CHROMA INPUT
CH-1 PB IN : CH-1 HEAD AMP INPUT
CH-1 REC IN : CH-1 REC AMP INPUT
CH-2 PB IN : CH-2 HEAD AMP INPUT
CH-2 REC IN : CH-2 REC AMP INPUT
C VOL : REC CHROMA GAIN CONTROL
PB 5V : PB ON/OFF CONTROL
PCM IN : REC PCM SIGNAL INPUT
PCM REC : PCM AUDIO RECORDING MODE
PCM VOL : REC PCM GAIN CONTROL
RF IN : VIDEO INPUT FOR RF OUT 3
RF SWP IN : RF SWITCHING PULSE INPUT
V ABP IN : OVER LAP RECORDING MODE INPUT
V REC IN : VIDEO RECORDING MODE INPUT
Y IN : REC Y INPUT
Y VOL : REC Y GAIN CONTROL

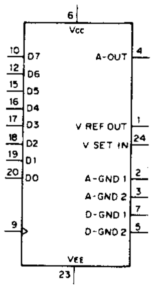
OUTPUT
BT : BIAS TRAP FILTER
CH-1 OUT : REC CH-1 OUTPUT
CH-1 DTF OUT : DTF CH-1 OUTPUT
CH-1 H AMP OUT : CH-1 HEAD AMP OUTPUT
CH-1 REC OUT : CH-1 REC AMP OUTPUT
CH-2 OUT : REC CH-2 OUTPUT
CH-2 DTF OUT : DTF CH-2 OUTPUT
CH-2 H AMP OUT : CH-2 HEAD AMP OUTPUT
CH-2 REC OUT : CH-2 REC AMP OUTPUT
RF OUT 1 : RF OUTPUT FOR VIDEO
RF OUT 2 : RF OUTPUT FOR PCM
RF OUT 3 : RF OUTPUT

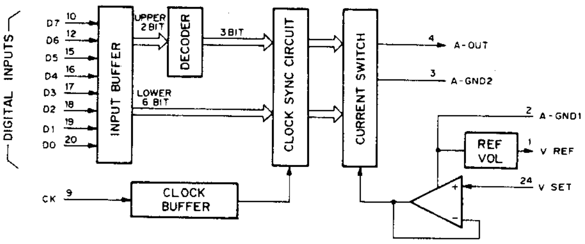
OTHERS
CH-1 LPC : BYPASS CAPACITOR FOR CH-1 HEAD AMP
CH-1 PC1 : BYPASS CAPACITOR FOR CH-1 HEAD AMP
CH-1 Z : LCR RESONANCE CIRCUIT
CH-2 LPC : BYPASS CAPACITOR FOR CH-2 2nd RF AMP
CH-2 PC1 : BYPASS CAPACITOR FOR CH-2 HEAD AMP
CH-2 Z : LCR RESONANCE CIRCUIT
PC 2 : BYPASS CAPACITOR
PC 3 : BYPASS CAPACITOR FOR ATTENUATER


28 HEAD AMP Vcc
33 REC AMP Vcc
11 PB Vcc
45 REC Vcc
CH-2 PB IN 35
CH-2 PC 1 34
CH-2 HEAD AMP
C/D
32 CH-2 HAMP OUT
29 CH-1 HAMP OUT
15 CH-2 DTF OUT
16 CH-1 DTF OUT
5 RF OUT 2
CH-2 LPC 41
CH-2 Z 42
PC 2 20
REF
CH-1 Z 18
CH-1 LPC 17
2nd RF AMP
2nd RF AMP
BUFF
6dB ATTENNATOR
8 RF OUT 3
10 RF IN
9 PC3
12 RF OUT 1
13 BT
CH-1 PC1 27
CH-1 PB IN 26
CH-1 HEAD AMP
Y IN 1
Y VOL 21
Y VOL
C IN 3
C VOL 44
C VOL
PCM IN 46
PCM VOL
PCM VOL 22
ATF IN 40
ATF VOL
ATF VOL 39
CH-2 REC IN 38
CH-1 REC IN 23
37 CH-2 SIGNAL OUT
24 CH-1 SIGNAL OUT
CH2 REC AMP
36 CH-2 REC OUT
CH1 REC AMP
25 CH-1 REC OUT
V REC 48
V ABP 47
RF SWP 2
PB 5V 4
PCM REC 6
ACK JOG IN 7
AF REC 14
CONTROL LOGIC
HEAD AMP GND 30
REC AMP GND 31
PB GND 19
REC GND 43

CXA1106M (SONY) FLAT PACKAGE
8-BIT D/A CONVERTER (TTL INPUT)
- TOP VIEW -

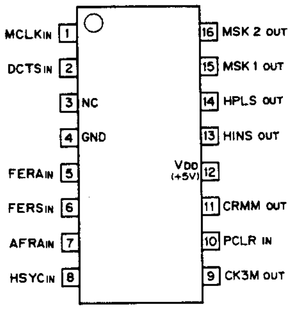

V REF OUT 1
2 A-GND1
3 A-GND2
A-OUT 4
5 D-GND2
6 Vcc (+5V)
7 D-GND1
8 NC
CK(CLOCK) IN 9
D7 IN 10
11 NC
D6 IN 12
24 V SET IN
VEE (-5V) 23
NC 22
NC 21
20 D0 IN
19 D1 IN
18 D2 IN
17 D3 IN
16 D4 IN
15 D5 IN
NC 14
NC 13

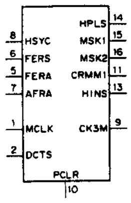

6 Vcc
10 D7
12 D6
15 D5
16 D4
17 D3
18 D2
19 D1
20 D0
9
A-OUT 4
V REF OUT 1
V SET IN 24
A-GND 1 2
A-GND 2 3
D-GND 1 7
D-GND 2 5
Vee 23


DIGITAL INPUTS
D7 10
D6 12
D5 15
D4 16
D3 17
D2 18
D1 19
D0 20
INPUT BUFFER
UPPER 2BIT
DECODER
3BIT
LOWER 6 BIT
CLOCK SYNC CIRCUIT
CURRENT SWITCH
4 A-OUT
3 A-GND2
2 A-GND1
REF VOL
1 V REF
24 V SET
CK 9
CLOCK BUFFER

CXD1051M (SONY) FLAT PACKAGE

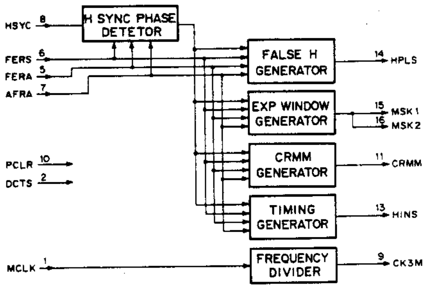
C-MOS VIDEO PULSE GENERATOR
– TOP VIEW –


MCLKIN 1
DCTSIN 2
3 NC
4 GND
FERAIN 5
FERSIN 6
AFRAIN 7
HSYCIN 8
16 MSK 2 OUT
15 MSK 1 OUT
14 HPLS OUT
13 HINS OUT
VDD (+5V) 12
11 CRMM OUT
10 PCLR IN
9 CK3M OUT


8 HSYC
6 FERS
5 FERA
7 AFRA
1 MCLK
2 DCTS
HPLS 14
MSK1 15
MSK2 16
CRMM1 11
HINS 13
CK3M 9
PCLR 10

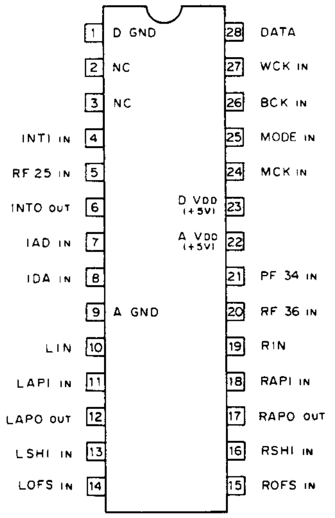
INPUT
AFRA : AFTER REC MASK AREA INPUT
DCTS : TEST PIN
FERA : FLYING ERASE MASK AREA INPUT
FERS : FLYING ERASE RUN AREA INPUT
HSYC : HORIZONTAL SYNC INPUT
MCLK : CLOCK INPUT
PCLR : POWER ON/CLEAR INPUT

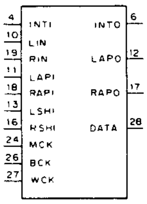
OUTPUT
CK3M : MCLK/4 CLOCK OUTPUT
CRMM : CHROMA MUTE OUTPUT
HINS : FALSE HD TIMING OUTPUT
HPLS : FALSE HD PULSE OUTPUT
MSK1 – MSK2 : VIDEO MASKING OUTPUTS


HSYC 8
FERS 6
FERA 5
AFRA 7
PCLR 10
DCTS 2
MCLK 1
H SYNC PHASE DETETOR
FALSE H GENERATOR
EXP WINDOW GENERATOR
CRMM GENERATOR
TIMING GENERATOR
FREQUENCY DIVIDER
14 HPLS
15 MSK1
16 MSK2
11 CRMM
13 HINS
9 CK3M

CXD1077M (SONY) MINI FLAT PACKAGE

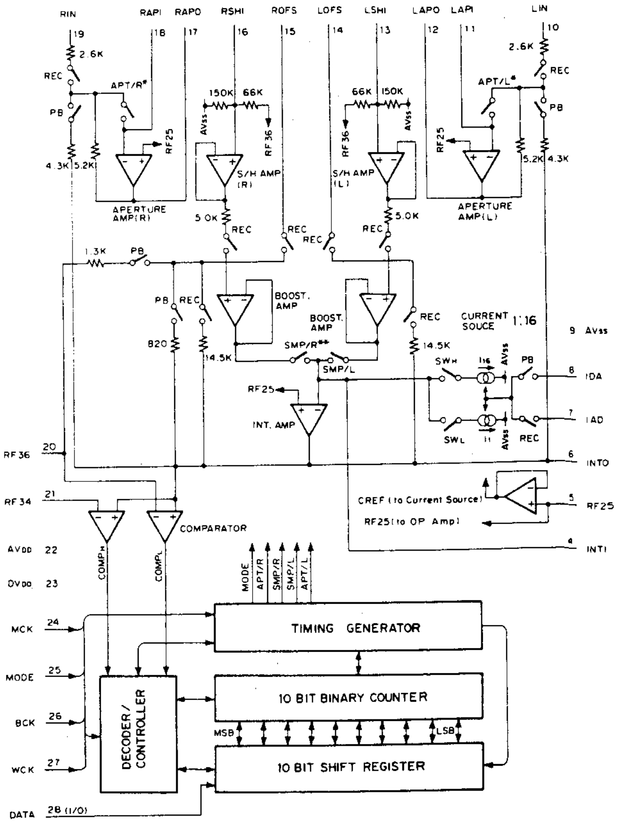
C-MOS A/D, D/A CONVERTER FOR PCM AUDIO
— TOP VIEW —


1 D GND
2 NC
3 NC
INTI IN 4
RF 25 IN 5
INTO OUT 6
IAD IN 7
IDA IN 8
9 A GND
LIN 10
LAPI IN 11
LAPO OUT 12
LSHI IN 13
LOFS IN 14
28 DATA
27 WCK IN
26 BCK IN
25 MODE IN
24 MCK IN
D VDD (+5V) 23
A VDD (+5V) 22
21 PF 34 IN
20 RF 36 IN
19 RIN
18 RAPI IN
17 RAPO OUT
16 RSHI IN
15 ROFS IN

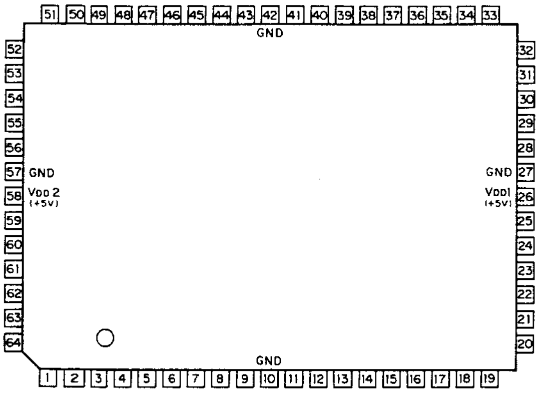

4 INTI
10 LIN
19 RIN
11 LAPI
18 RAPI
13 LSHI
16 RSHI
24 MCK
26 BCK
27 WCK
INTO 6
LAPO 12
RAPO 17
DATA 28

BCK ; BIT CLOCK INPUT TERMINAL
DATA ; DATA INPUT/OUTPUT TERMINAL
IAD ; INTEGRATION CURRENT SET UP TERMINAL (REC MODE)
IDA ; INTEGRATION CURRENT SET UP TERMINAL (PB MODE)
INTI ; INTEGRATION AMP INPUT TERMINAL
INTO ; INTEGRATION AMP OUTPUT TERMINAL
LAPI ; APERTURE AMP INPUT TERMINAL (L)
LAPO ; APERTURE AMP OUTPUT TERMINAL (L)
L IN ; ANALOG SIGNAL INPUT TERMINAL (L)
LOFS ; OFFSET CORRECT TERMINAL (L)
LSHI ; SAMPLE & HOLD AMP (L) INPUT TERMINAL
MCK ; MASTER CLOCK INPUT TERMINAL
MODE ; REC MODE/PB MODE SET UP TERMINAL
RAPO ; APERTURE AMP OUTPUT TERMINAL (R)
RAPI ; APERTURE AMP INPUT TERMINAL (R)
R IN ; ANALOG SIGNAL INPUT TERMINAL (R)
RF25 ; IMAGINE CONTACT ELECTORIC POTENTIAL SET UP TERMINAL
RF34 ; HIGHER RANK VOLTAGE SET UP TERMINAL
RF36 ; (REC) LOW RANK COMPARATOR VOLTAGE OR
(PB) DISCHARGE VOLTAGE SET UP TERMINAL
ROFS ; OFFSET CORRECT TERMINAL (R)
RSHI ; SAMPLE & HOLD AMP (R) INPUT TERMINAL
WCK ; WORD CLOCK INPUT TERMINAL

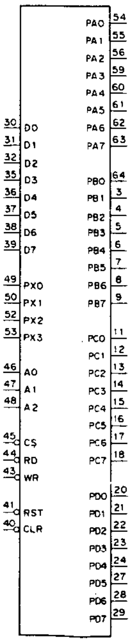
	(REC MODE)	(PB MODE)
* APT/L,R	EVER ON	APERTURE
** SMP/R	SAMPLING	DISCHARGE


RIN 19
RAPI 18
RAPO 17
RSHI 16
ROFS 15
LOFS 14
LSHI 13
LAPO 12
LAPI 11
LIN 10
2.6K
REC
PB
APT/R*
APT/L*
4.3K
5.2K
RF25
150K
66K
AVss
RF36
S/H AMP (R)
S/H AMP (L)
APERTURE AMP(R)
APERTURE AMP(L)
5.0K
1.3K
820
14.5K
BOOST. AMP
SMP/R**
SMP/L
CURRENT SOUCE 1:16
SWH
SWL
I16
I1
9 AVss
8 IDA
7 IAD
6 INTO
5 RF25
4 INTI
INT. AMP
RF36 20
RF34 21
AVDD 22
DVDD 23
COMPARATOR
COMPH
COMPL
CREF (to Current Source)
RF25 (to OP Amp)
MODE
APT/R
SMP/R
SMP/L
APT/L
MCK 24
MODE 25
BCK 26
WCK 27
DATA 28 (I/O)
TIMING GENERATOR
10 BIT BINARY COUNTER
10 BIT SHIFT REGISTER
DECODER/CONTROLLER
MSB
LSB

CXD1095Q (SONY) FLAT PACKAGE
C-MOS I/O PORT EXPANDER
— TOP VIEW —


GND
GND
Vdd 2 (+5V)
GND
Vdd1 (+5V)
GND
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19
20 21 22 23 24 25 26 27 28 29 30 31 32
33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51
52 53 54 55 56 57 58 59 60 61 62 63 64

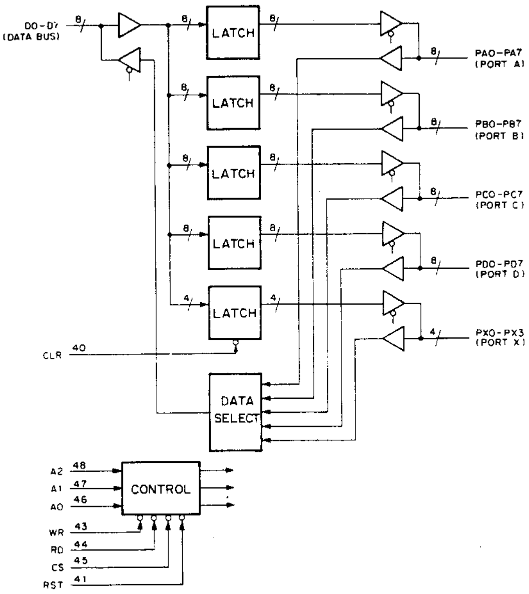
PIN NO.	IN	OUT	SYMBOL	PIN NO.	IN	OUT	SYMBOL	PIN NO.	IN	OUT	SYMBOL	PIN NO.	IN	OUT	SYMBOL
1			NC	17	○	○	PC6	33			NC	49	○	○	PX0
2			NC	18	○	○	PC7	34			NC	50	○	○	PX1
3	○	○	PB1	19			NC	35	○	○	D3	51			NC
4	○	○	PB2	20	○	○	PD0	36	○	○	D4	52	○	○	PX2
5	○	○	PB3	21	○	○	PD1	37	○	○	D5	53	○	○	PX3
6	○	○	PB4	22	○	○	PD2	38	○	○	D6	54	○	○	PA0
7	○	○	PB5	23	○	○	PD3	39	○	○	D7	55	○	○	PA1
8	○	○	PB6	24	○	○	PD4	40	○		CLR	56	○	○	PA2
9	○	○	PB7	25			GND	41	○		RST	57			GND
10			GND	26	○		VDD (+5V)	42			GND	58	○		VDD (+5V)
11	○	○	PC0	27	○	○	PD5	43	○		WR	59	○	○	PA3
12	○	○	PC1	28	○	○	PD6	44	○		RD	60	○	○	PA4
13	○	○	PC2	29	○	○	PD7	45	○		CS	61	○	○	PA5
14	○	○	PC3	30	○	○	D0	46	○		A0	62	○	○	PA6
15	○	○	PC4	31	○	○	D1	47	○		A1	63	○	○	PA7
16	○	○	PC5	32	○	○	D2	48	○		A2	64	○	○	PB0


30 D0
31 D1
32 D2
35 D3
36 D4
37 D5
38 D6
39 D7
49 PX0
50 PX1
52 PX2
53 PX3
46 A0
47 A1
48 A2
45 CS
44 RD
43 WR
41 RST
40 CLR
PA0 54
PA1 55
PA2 56
PA3 59
PA4 60
PA5 61
PA6 62
PA7 63
PB0 64
PB1 3
PB2 4
PB3 5
PB4 6
PB5 7
PB6 8
PB7 9
PC0 11
PC1 12
PC2 13
PC3 14
PC4 15
PC5 16
PC6 17
PC7 18
PD0 20
PD1 21
PD2 22
PD3 23
PD4 24
PD5 27
PD6 28
PD7 29

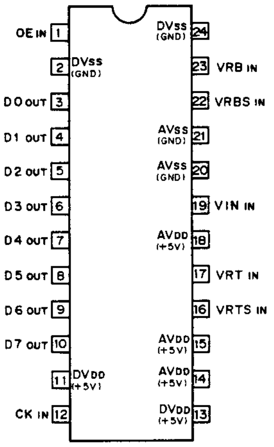
CS	RD	WR	A2	A1	A0	MODE
0	0	1	0	0	0	PORT A → DATA BUS
0	0	1	0	0	1	PORT B → DATA BUS
0	0	1	0	1	0	PORT C → DATA BUS
0	0	1	0	1	1	PORT D → DATA BUS
0	0	1	1	0	0	PORT X → DATA BUS
0	0	1	1	0	1	——
0	0	1	1	1	0	——
0	0	1	1	1	1	——
0	1	0	0	0	0	DATA BUS → PORT A
0	1	0	0	0	1	DATA BUS → PORT B
0	1	0	0	1	0	DATA BUS → PORT C
0	1	0	0	1	1	DATA BUS → PORT D
0	1	0	1	0	0	DATA BUS → PORT X
0	1	0	1	0	1	——
0	1	0	1	1	0	DATA BUS → CTL REG.1
0	1	0	1	1	1	DATA BUS → CTL REG.2
1	X	X	X	X	X	DATA BUS ; HI-Z

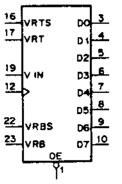
0 ; LOW LEVEL
1 ; HIGH LEVEL
X ; DON'T CARE
HI-Z , HIGH IMPEDANCE

D0-D7 ; DATA BUS INPUTS/OUTPUTS
CS ; CHIP SELECT INPUT
RD ; READ STROBE INPUT
WR ; WRITE STROBE INPUT
A0-A2 ; ADDRESS INPUT
RST ; RESET INPUT
CLR ; CLEAR INPUT
PA0-PA7 ; PORT A INPUTS/OUTPUTS
PB0-PB7 ; PORT B INPUTS/OUTPUTS
PC0-PC7 ; PORT C INPUTS/OUTPUTS
PD0-PD7 ; PORT D INPUTS/OUTPUTS
PX0-PX3 ; PORT X INPUTS/OUTPUTS


D0-D7 (DATA BUS)
8
LATCH
LATCH
LATCH
LATCH
LATCH
4
PA0-PA7 (PORT A)
PB0-PB7 (PORT B)
PC0-PC7 (PORT C)
PD0-PD7 (PORT D)
PX0-PX3 (PORT X)
CLR 40
DATA SELECT
A2 48
A1 47
A0 46
WR 43
RD 44
CS 45
RST 41
CONTROL

CXD1175M (SONY) FLAT PACKAGE
C-MOS 8-BIT 20MSPS VIDEO A/D CONVERTER
— TOP VIEW —

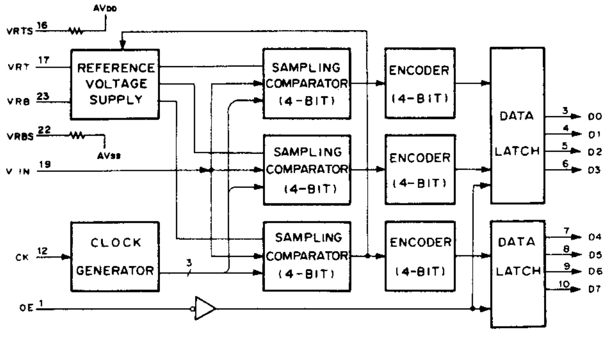

OE IN 1
2 DVss (GND)
D0 OUT 3
D1 OUT 4
D2 OUT 5
D3 OUT 6
D4 OUT 7
D5 OUT 8
D6 OUT 9
D7 OUT 10
11 DVDD (+5V)
CK IN 12
DVss (GND) 24
23 VRB IN
22 VRBS IN
AVss (GND) 21
AVss (GND) 20
19 VIN IN
AVDD (+5V) 18
17 VRT IN
16 VRTS IN
AVDD (+5V) 15
AVDD (+5V) 14
DVDD (+5V) 13


16 VRTS
17 VRT
19 V IN
12
22 VRBS
23 VRB
OE 1
D0 3
D1 4
D2 5
D3 6
D4 7
D5 8
D6 9
D7 10

AV_{DD} : ANALOG POWER SUPPLY
AV_{SS} : ANALOG GROUND
CK : CLOCK INPUT
D0 ~ 7 : DIGITAL DATA OUTPUTS (LSB to MSB)
DV_{DD} : DIGITAL POWER SUPPLY
DV_{SS} : DIGITAL GROUND
OE : OUTPUT ENABLE
(OE = HIGH ; HIGH IMPEDANCE)
VIN : ANALOG VOLTAGE INPUT
VRB : BOTTOM REFERENCE VOLTAGE INPUT
VRBS : AS SHORT-CIRCUIT AT VRB, GENERATES + 0.6V
VRT : TOP REFERENCE VOLTAGE INPUT
VRTS : AS SHORT-CIRCUIT AT VRT, GENERATES + 2.6V

STEP	INPUT SIGNAL VOLTAGE	DATA OUTPUTS							
		D7	D6	D5	D4	D3	D2	D1	D0
0	0V (VRT)	1	1	1	1	1	1	1	1
1	0.01V	1	1	1	1	1	1	1	0
⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮
127	1.34V	1	0	0	0	0	0	0	0
128	1.35V	0	1	1	1	1	1	1	1
⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮
255	2.7V (VRB)	0	0	0	0	0	0	0	0

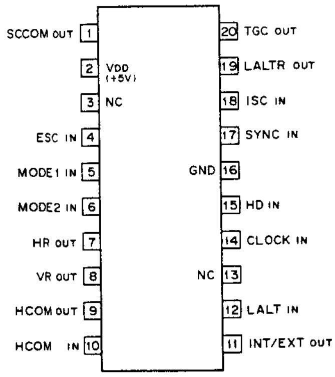
0 : LOW LEVEL
1 : HIGH LEVEL

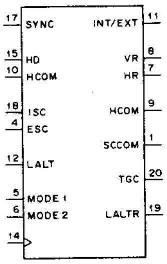

AVDD
VRTS 16
VRT 17
VRB 23
VRBS 22
AVss
V IN 19
CK 12
OE 1
REFERENCE VOLTAGE SUPPLY
SAMPLING COMPARATOR (4-BIT)
SAMPLING COMPARATOR (4-BIT)
SAMPLING COMPARATOR (4-BIT)
ENCODER (4-BIT)
ENCODER (4-BIT)
ENCODER (4-BIT)
CLOCK GENERATOR
3
DATA LATCH
DATA LATCH
3 D0
4 D1
5 D2
6 D3
7 D4
8 D5
9 D6
10 D7

CXD1216M (SONY) FLAT PACKAGE

C-MOS GENLOCK DRIVER

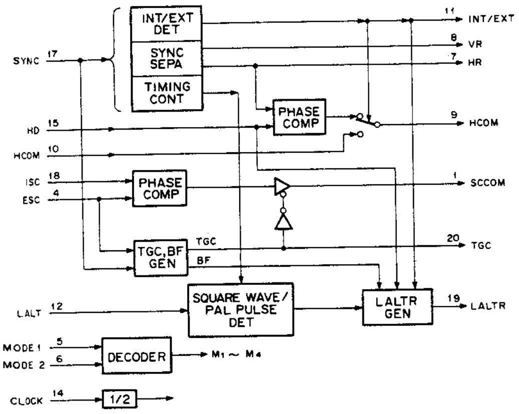
- TOP VIEW -


SCCOM OUT 1
2 VDD (+5V)
3 NC
ESC IN 4
MODE1 IN 5
MODE2 IN 6
HR OUT 7
VR OUT 8
HCOM OUT 9
HCOM IN 10
20 TGC OUT
19 LALTR OUT
18 ISC IN
17 SYNC IN
GND 16
15 HD IN
14 CLOCK IN
NC 13
12 LALT IN
11 INT/EXT OUT


17 SYNC
15 HD
10 HCOM
18 ISC
4 ESC
12 LALT
5 MODE 1
6 MODE 2
14
INT/EXT 11
VR 8
HR 7
HCOM 9
SCCOM 1
TGC 20
LALTR 19

INPUT		MODE	SYSTEM
MODE1	MODE2		
0	0	M1	PAL-VBS
1	0	M2	PALM-VBS
0	1	M3	PAL,SECAM-VS/SC/LALT
1	1	M4	NTSC-VBS,NTSC-VS/SC PALM-VS/SC/LALT

0 ; LOW LEVEL
1 ; HIGH LEVEL


SYNC 17
HD 15
HCOM 10
ISC 18
ESC 4
LALT 12
MODE 1 5
MODE 2 6
CLOCK 14
INT/EXT DET
SYNC SEPA
TIMING CONT
PHASE COMP
PHASE COMP
TGC,BF GEN
TGC
BF
SQUARE WAVE/ PAL PULSE DET
LALTR GEN
DECODER
M1 ~ M4
1/2
11 INT/EXT
8 VR
7 HR
9 HCOM
1 SCCOM
20 TGC
19 LALTR

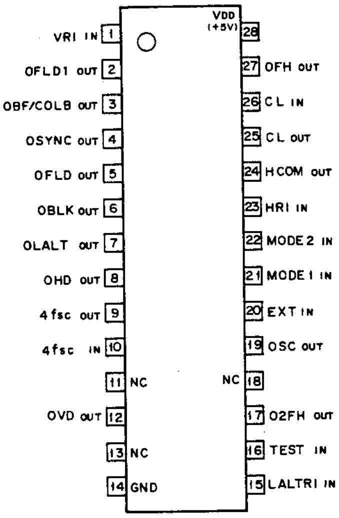
INPUT
CLOCK ; 4fsc INPUT
ESC ; SC/COLOR BURST
HCOM ; PHASE COMPARATE FROM CXD1217
HD ; H DRIVE FROM CXD1217
ISC ; SUBCARRIER FROM CXD1217
LALT ; LALT FROM REFERENCE SIGNAL GENERATOR
MODE1,2 ; SYSTEM SELECT
SYNC ; SYNC FROM REFERENCE SIGNAL GENERATOR

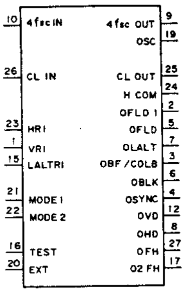
OUT PUT
HCOM ; PHASE COMPARATOR HR WITH HD
HR ; f_H OF SYNC SEPARATE
INT/EXT ; INTERNAL/EXTERNAL SPECIFIED
LALTR ; LINE CHANGE RESET
SCCOM ; PHASE COMPARATOR ESC WITH ISC
TGC ; TRISTATE CONTROL
VR ; f_V OF SYNC SEPARATE

CXD1217M (SONY) FLAT PACKAGE

C-MOS SYNC GENERATOR

- TOP VIEW -

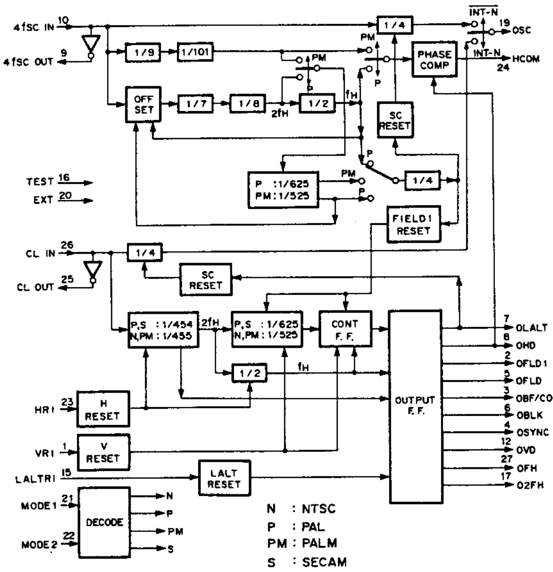

VRI IN 1
OFLD1 OUT 2
OBF/COLB OUT 3
OSYNC OUT 4
OFLD OUT 5
OBLK OUT 6
OLALT OUT 7
OHD OUT 8
4fsc OUT 9
4fsc IN 10
11 NC
OVD OUT 12
13 NC
14 GND
VDD (+5V) 28
27 OFH OUT
26 CL IN
25 CL OUT
24 HCOM OUT
23 HRI IN
22 MODE 2 IN
21 MODE 1 IN
20 EXT IN
19 OSC OUT
NC 18
17 O2FH OUT
16 TEST IN
15 LALTRI IN


10 4fsc IN
26 CL IN
23 HRI
1 VRI
15 LALTRI
21 MODE 1
22 MODE 2
16 TEST
20 EXT
4fsc OUT 9
OSC 19
CL OUT 25
H COM 24
OFLD 1 2
OFLD 5
OLALT 7
OBF/COLB 3
OBLK 6
OSYNC 4
OVD 12
OHD 8
OFH 27
O2 FH 17

SYSTEM	4fsc	CLOCK
NTSC	910f_H	910f_H
PAL	1135f_H+2f_V	908f_H
PALM	909f_H	910f_H
SECAM	—	908f_H

INPUT		SYSTEM
MODE1	MODE2	
0	0	NTSC
0	1	SECAM
1	0	PALM
1	1	PAL

0 ; LOW LEVEL
1 ; HIGH LEVEL


4fsc IN 10
4fsc OUT 9
TEST 16
EXT 20
CL IN 26
CL OUT 25
HRI 23
VRI 1
LALTRI 15
MODE 1 21
MODE 2 22
1/9
1/101
OFF SET
1/7
1/8
2fH
1/2
fH
1/4
PHASE COMP
SC RESET
P :1/625 PM:1/525
1/4
FIELD1 RESET
1/4
SC RESET
P,S :1/454 N,PM : 1/455
2fH
P,S :1/625 N,PM : 1/525
CONT F.F.
1/2
fH
OUTPUT F.F.
H RESET
V RESET
LALT RESET
DECODE
N
P
PM
S
INT-N
19 OSC
INT-N
24 HCOM
PM
P
7 OLALT
8 OHD
2 OFLD1
5 OFLD
3 OBF/COLB
6 OBLK
4 OSYNC
12 OVD
27 OFH
17 O2FH
N : NTSC
P : PAL
PM : PALM
S : SECAM

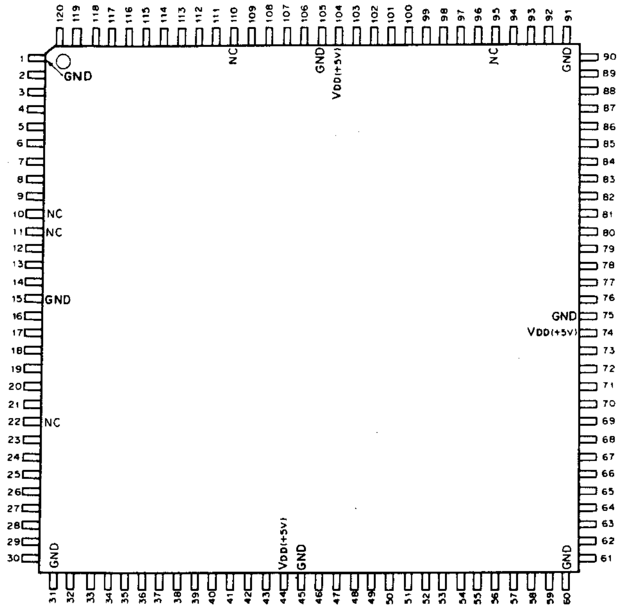
INPUT
4fSC IN ; 4fSC INPUT
CL IN ; CLOCK INPUT
EXT ; SYNC MODE SELECT
(L ; INTERNAL/H ; EXTERNAL)
HRI ; H RESET
LALTRI ; LINE CHANGE RESET
MODE 1,2 ; SYSTEM SELECT
VRI ; V RESET

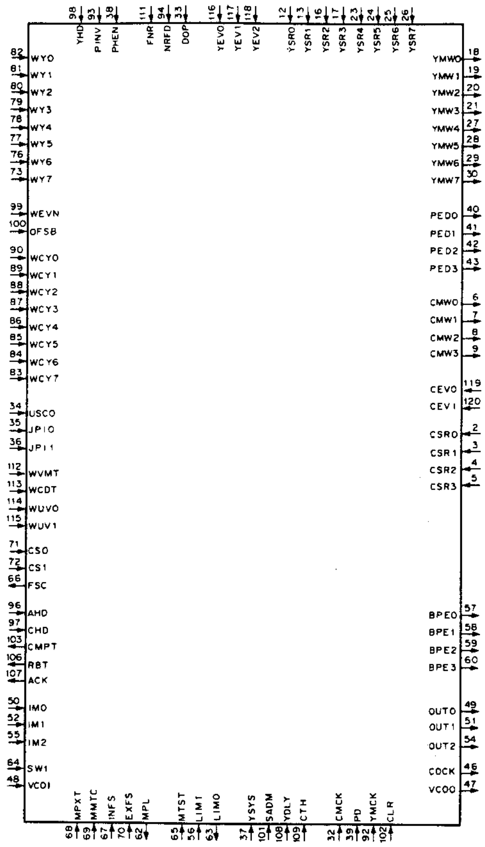
OUT PUT
4fSC OUT ; 4fSC OUTPUT
CL OUT ; CLOCK OUTPUT
HCOM ; PHASE COMPARATOR
O2fH ; 2fH OUTPUT
OBF/COLB : BURST FLAG/COLOR BLANKING
OBLK ; COMPOSITE BLANKING
OFH ; H FREQUENCE
OFLD ; EVEN, ODD
OFLD1 ; FIELD1
OHD ; H DRIVE
OLALT ; LINE CHANGE
OSC ; SUBCARRIER
OSYNC ; COMPOSITE SYNC
OVD ; V DRIVE

CXD1226Q (SONY) FLAT PACKAGE

C-MOS DIGITAL CHROMA DECODER/Y, C FIELD NOISE REDUCER

– TOP VIEW –


GND
NC
NC
GND
NC
GND
NC
VDD(+5V)
NC
GND
GND
VDD(+5V)
GND
VDD(+5V)
GND
GND


98 YHD
93 PINV
38 PHEN
111 FNR
94 NRFD
33 DOP
116 YEV0
117 YEV1
118 YEV2
12 YSR0
13 YSR1
16 YSR2
17 YSR3
23 YSR4
24 YSR5
25 YSR6
26 YSR7
82 WY0
81 WY1
80 WY2
79 WY3
78 WY4
77 WY5
76 WY6
73 WY7
99 WEVN
100 OFSB
90 WCY0
89 WCY1
88 WCY2
87 WCY3
86 WCY4
85 WCY5
84 WCY6
83 WCY7
34 USC0
35 JPI0
36 JPI1
112 WVMT
113 WCDT
114 WUV0
115 WUV1
71 CS0
72 CS1
66 FSC
96 AHD
97 CHD
103 CMPT
106 RBT
107 ACK
50 IM0
52 IM1
55 IM2
64 SW1
48 VCOI
YMW0 18
YMW1 19
YMW2 20
YMW3 21
YMW4 27
YMW5 28
YMW6 29
YMW7 30
PED0 40
PED1 41
PED2 42
PED3 43
CMW0 6
CMW1 7
CMW2 8
CMW3 9
CEV0 119
CEV1 120
CSR0 2
CSR1 3
CSR2 4
CSR3 5
BPE0 57
BPE1 58
BPE2 59
BPE3 60
OUT0 49
OUT1 51
OUT2 54
COCK 46
VCOO 47
MPXT 68
MMTC 69
INFS 67
EXFS 70
MPL 62
MTST 65
LIMI 56
LIMO 63
YSYS 37
SADM 101
YDLY 108
CTH 109
CMCK 32
PD 39
YMCK 92
CLR 102

PIN NO.	I/O	SYMBOL	PIN NO.	I/O	SYMBOL	PIN NO.	I/O	SYMBOL	PIN NO.	I/O	SYMBOL
1	–	GND	31	–	GND	61	–	GND	91	–	GND
2	I	CSR0	32	I	CMCK	62	O	MPL	92	I	YMCK
3	I	CSR1	33	I	DOP	63	O	LIMO	93	I	PINV
4	I	CSR2	34	I	USC0	64	I	SW1	94	I	NRFD
5	I	CSR3	35	I	JPI0	65	I	MTST	95	–	NC
6	O	CMW0	36	I	JPI1	66	O	FSC	96	I	AHD
7	O	CMW1	37	I	YSYS	67	I	INFS	97	I	CHD
8	O	CMW2	38	I	PHEN	68	I	MPXT	98	I	YHD
9	O	CMW3	39	I	PD	69	I	MMTC	99	I	WEVN
10	–	NC	40	O	PED0	70	I	EXFS	100	I	OFSB
11	–	NC	41	O	PED1	71	I	CS0	101	I	SADM
12	I	YSR0	42	O	PED2	72	I	CS1	102	I	CLR
13	I	YSR1	43	O	PED3	73	I	WY7	103	O	CMPT
14	–	VDD (+5V)	44	–	VDD (+5V)	74	–	VDD (+5V)	104	–	VDD (+5V)
15	–	GND	45	–	GND	75	–	GND	105	–	GND
16	I	YSR2	46	O	COCK	76	I	WY6	106	O	RBT
17	I	YSR3	47	O	VCOO	77	I	WY5	107	O	ACK
18	O	YMW0	48	I	VCOI	78	I	WY4	108	I	YDLY
19	O	YMW1	49	O	OUT0	79	I	WY3	109	I	CTH
20	O	YMW2	50	I	IM0	80	I	WY2	110	–	NC
21	O	YMW3	51	O	OUT1	81	I	WY1	111	I	FNR
22	–	NC	52	I	IM1	82	I	WY0	112	I	WVMT
23	I	YSR4	53	–	AG	83	I	WCY7	113	I	WCDT
24	I	YSR5	54	O	OUT2	84	I	WCY6	114	I	WUV0
25	I	YSR6	55	I	IM2	85	I	WCY5	115	I	WUV1
26	I	YSR7	56	I	LIMI	86	I	WCY4	116	I	YEV0
27	O	YMW4	57	O	BPE0	87	I	WCY3	117	I	YEV1
28	O	YMW5	58	O	BPE1	88	I	WCY2	118	I	YEV2
29	O	YMW6	59	O	BPE2	89	I	WCY1	119	I	CEV0
30	O	YMW7	60	O	BPE3	90	I	WCY0	120	I	CEV1

*1 CHROMA SYSTEM MODE SELECTION

CS1	CS0	MODE
0	0	NTSC
0	1	PAL
1	0	CHROMA BASE BAND INPUT
1	1	PROHIBITION

*2 Y SIGNAL NOISE REDUCER SELECTION

YEV0	YEV1	YEV2	OPERATION
0	0	0	NOISE REDUCER (SOFT)
0	0	1	NOISE REDUCER (MIDDLE)
0	1	0	NOISE REDUCER (STRONG)
0	1	1	AFTER IMAGE
1	0	0	VERTICAL FILTER
1	0	1	FADE IN/OUT
1	1	0	SELECT AFTER IMAGE
1	1	1	NO OPERATION

*3 CHROMA SIGNAL NOISE REDUCER SELECTION

CEV0	CEV1	OPERATION
0	0	NOISE REDUCER (SOFT)
0	1	NOISE REDUCER (MIDDLE)
1	0	NOISE REDUCER (STRONG)
1	1	NO OPERATION

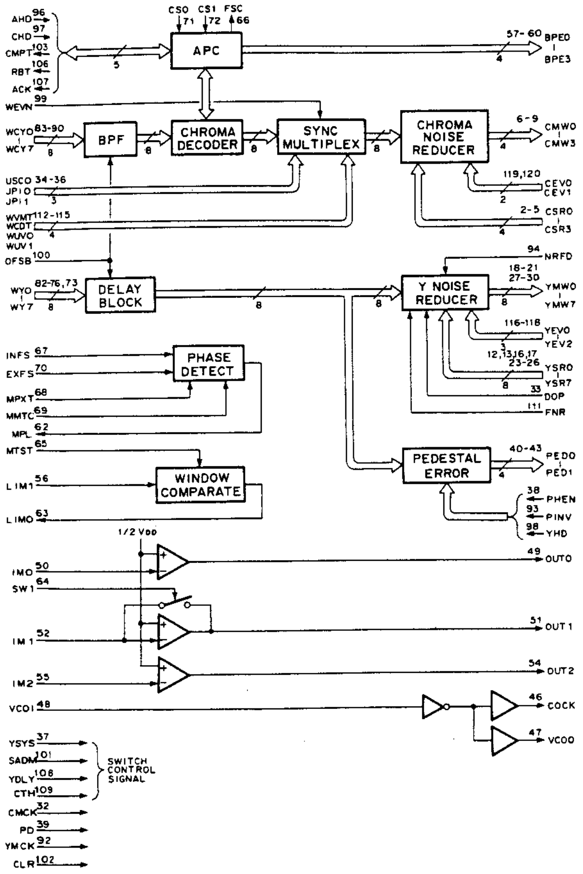
0 : LOW LEVEL
1 : HIGH LEVEL

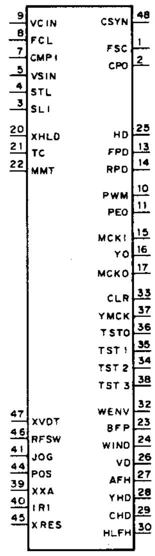
INPUT

AG : ANALOG GND
AHD : H SYNC INPUT FOR APC
*3 CEV0, 1 : C NOISE REDUCER MODE SELECT INPUTS
CHD : H SYNC INPUT FOR BURST DETECT
CLR : DIRECT CLEAR INPUT
CMCK : CLOCK INPUT FOR CHROMA SYSTEM
CSR0 – CSR3 : CHROMA READ DATA INPUTS
*1 CS0, 1 : CHROMA SYSTEM SELECT INPUTS
CTH : CHROMA TEST TERMINAL
DOP : DROPOUT CONPENSATION PULSE INPUT
EXFS : EXTERNAL Fsc INPUT
FNR : NOISE REDUCER ON/OFF CNTROL INPUT
IM0 – IM2 : AUDIO RANGE AMP INPUTS
INFS : INTERNAL Fsc INPUT
JPI0, 1 : ID CODE MONITOR INPUTS (D2, D3)
LIMI : WINDOW COMPARATOR INPUT
MMTC, MPXT, MTST, PD
: TEST PIN
NRFD : Y FIELD NOISE REDUCER DATA INPUT
OFSB : OFF SET BINARY MODE INPUT
PHEN : CHROMA APC SYSTEM CONTROL INPUT
PINV : PEDESTAL CLAMP ERROR INVERT INPUT
SADM : Y/C SIGNAL, H : COMPOSITE SIGNAL SELECT INPUT
SW1 : AUDIO RANGE SWITCH INPUT
USC0 : USER CODE FOR OPTION
VCOI : VCO INPUT
WCDT : WRITE FRAMING CODE TIMING INPUT
WCY0 – WCY7 : L CHROMA SIGNAL, H : COMPOSITE SIGNAL INPUTS
WEVN : WRITE EVEN/ODD FIELD MONITOR INPUT
WUV0, 1 : WRITE U/V TIMING INPUTS
MVMT : WRITE VIDEO MUTE
WY0 – WY7 : WRITE Y SIGNAL INPUTS
YDLY : Y DELAY ADJUST INPUT
*2 YEV0 – YEV2 : Y NOISE REDUCER MODE SELECT INPUTS
YHD : Y H DRIVE PULSE INPUT
YMCK : Y MEMORY CONTROL CLOCK INPUT
YSR0 – YSR7 : Y MEMORY DATA INPUTS
YSYS : Y DELAY ADJUST INPUT
(H : 3.58MHz C SYSTEM, L : 4.43MHz C SYSTEM)

OUTPUT

ACK : CLOCK OUTPUT FOR APC
(H : B/W MODE, L : COLOR MODE)
BPE0 – BPE3 : PHASE ERROR OUTPUTS FOR APC
(OFFSET BINARY OUTPUTS)
CMPT : MONITOR TERMINAL FOR TEST
CMW0 – CMW3 : CHROMA WRITE DATA OUTPUTS
COCK : VCO OUT CLOCK OUTPUT
FSC : 1/4 CLOCK OUTPUT
LIMO : WINDOW COMPARATOR OUTPUT
MPL : PHASE COMPARATOR ERROR OUTPUT
OUT0 – OUT2 : AUDIO RANGE AMP OUTPUTS
PED0 – PED3 : PEDESTAL CLAMP ERROR OUTPUTS
RBT : MONITOR PIN FOR TEST
VCOO : VCO OUTPUT
YMW0 – YMW7 : Y MEMORY DATA OUTPUTS


AHD 96
CHD 97
CMPT 103
RBT 106
ACK 107
WEVN 99
CS0 71
CS1 72
FSC 66
APC
57-60 BPE0 – BPE3
WCY0 – WCY7 83-90
BPF
CHROMA DECODER
SYNC MULTIPLEX
CHROMA NOISE REDUCER
6-9 CMW0 – CMW3
USCO 34-36
JP10
JP11
119,120 CEV0 CEV1
2-5 CSR0 – CSR3
WVMT 112-115
WCDT
WUV0
WUV1
OFSB 100
94 NRFD
WY0 – WY7 82-76,73
DELAY BLOCK
Y NOISE REDUCER
18-21 27-30 YMW0 – YMW7
116-118 YEV0 – YEV2
12,13,16,17 23-26 YSR0 – YSR7
33 DOP
111 FNR
INFS 67
EXFS 70
PHASE DETECT
MPXT 68
MMTC 69
MPL 62
MTST 65
LIM1 56
WINDOW COMPARATE
LIM0 63
PEDESTAL ERROR
40-43 PED0 – PED1
38 PHEN
93 PINV
98 YHD
1/2 VDD
IMO 50
49 OUT0
SW1 64
IM1 52
51 OUT1
IM2 55
54 OUT2
VCOI 48
46 COCK
47 VCOO
YSYS 37
SADM 101
YDLY 108
CTH 109
SWITCH CONTROL SIGNAL
CMCK 32
PD 39
YMCK 92
CLR 102


9 VCIN
8 FCL
7 CMPI
5 VSIN
4 STL
3 SLI
20 XHLD
21 TC
22 MMT
CSYN 48
FSC 1
CPO 2
HD 25
FPD 13
RPD 14
PWM 10
PEO 11
MCKI 15
YO 16
MCKO 17
CLR 33
YMCK 37
TST0 36
TST1 35
TST2 34
TST3 38
47 XVDT
46 RFSW
41 JOG
44 POS
39 XXA
40 IR1
45 XRES
WENV 32
BFP 23
WIND 24
VD 26
AFH 27
YHD 28
CHD 29
HLFH 30

INPUT

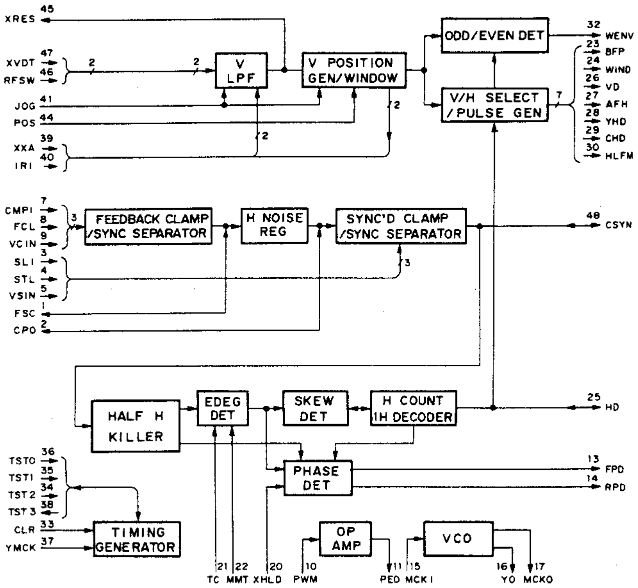
CLR	: DIRECT CLEAR INPUT
CMPI	: FEED BACK CLAMP SLICE LEVEL INPUT
FCL	: FEED BACK CLAMP SYNC CHIP LEVEL INPUT
JOG	: REFERENCE CONTROL INPUT
MCKI	: CLOCK (VCO) INVERTER INPUT
MMT	: MONO MULTI TEST PIN (H : NORMAL) INPUT
POS	: PHASE REFERENCE SELECT
PWM	: OP AMP INPUT
RFSW	: RF SW PULSE INPUT
SLI	: SYNC CLAMP SLICE LEVEL INPUT
STL	: SYNC CLAMP SYNC CHIP LEVEL INPUT
TST0	: L : NORMAL/H : TEST MODE INPUT
TST1, 2	: AFC LOCK PHASE COARSE ADJUST INPUTS
VCIN	: FEED BACK CLAMP VIDEO INPUT
VSIN	: SYNC CLAMP VIDEO INPUT
XHLD	: H : AFC ERROR ACTIVE/L : AFC ERROR HOLD INPUT
XVDT	: V DETECT COMPOSITE SYNC INPUT
YMCK	: MASTER CLOCK INPUT

OUTPUT

AFH	: AFC H DRIVE OUTPUT
BFP	: BURST FLAG PULSE OUTPUT
CHD	: H SYNC OUTPUT FOR BURST DETECT
FPD	: AFC SUB LOOP PHASE ERROR OUTPUT
HLFH	: $1/2f_H$ ($\fallingdotseq$ 7.5 kHz) OUTPUT
MCKO	: CLOCK (VCO) INVERTER OUTPUT ($910f_H$)
PEO	: OP AMP OUTPUT
RPD	: AFC MAIN LOOP PHASE ERROR OUTPUT
TST3	: L : NORMAL, H : TEST MODE OUTPUT
VD	: VERTICAL SYNC DETECT OUTPUT
WEVN	: WRITE EVEN/ODD FIELD DETECT OUTPUT
WIND	: WINDOW COMPARATOR OUTPUT FOR V-PLL
XRES	: V DETECT LPF OUTPUT
YO	: CLOCK (VCO) INVERT OUTPUT
YHD	: PEDESTAL CLAMP TIMING OUTPUT

INPUT/OUTPUT

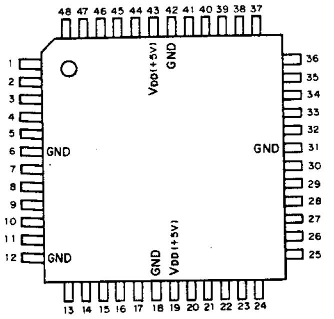
CPO	: CLAMP PULSE INPUT/OUTPUT
CSYN	: CLAMP SYNC SEPARATE INPUT/OUTPUT
FCS	: FEED BACK CLAMP SYNC SEPARATE INPUT/OUTPUT
HD	: AFC H DIRECT INPUT/OUTPUT
IR1	: MONITOR PIN FOR TEST INPUT/OUTPUT
TC	: AFC LOCK PHASE FINE ADJUST INPUT/OUTPUT
XXA	: MONITOR PIN FOR TEST INPUT/OUTPUT


XRES 45
XVDT 47
RFSW 46
2
V LPF
V POSITION GEN/WINDOW
ODD/EVEN DET
V/H SELECT /PULSE GEN
7
32 WENV
23 BFP
24 WIND
26 VD
27 AFH
28 YHD
29 CHD
30 HLFM
JOG 41
POS 44
XXA 39
IRI 40
CMPI 7
FCL 8
VCIN 9
3
FEEDBACK CLAMP /SYNC SEPARATOR
H NOISE REG
SYNC'D CLAMP /SYNC SEPARATOR
48 CSYN
SLI 3
STL 4
VSIN 5
FSC 1
CPO 2
HALF H KILLER
EDEG DET
SKEW DET
H COUNT 1H DECODER
25 HD
PHASE DET
13 FPD
14 RPD
TST0 36
TST1 35
TST2 34
TST3 38
CLR 33
YMCK 37
TIMING GENERATOR
OP AMP
VCO
21 TC
22 MMT
20 XHLD
10 PWM
11 PEO
15 MCKI
16 YO
17 MCKO

CXD1229Q (SONY) FLAT PACKAGE

C-MOS AUTOMATIC FREQUENCY CONTROL (AFC) /SYNC SEPARATOR

- TOP VIEW -


48 47 46 45 44 43 42 41 40 39 38 37
1
2
3
4
5
6
7
8
9
10
11
12
36
35
34
33
32
31
30
29
28
27
26
25
13 14 15 16 17 18 19 20 21 22 23 24
VDD(+5V)
GND
GND
GND
GND
GND
VDD(+5V)

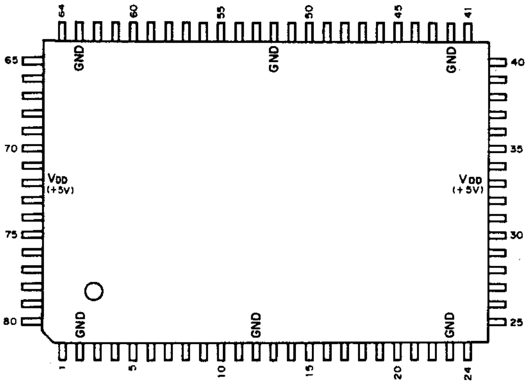
PIN ASSIGNMENT (V_{DD} = + 5V)

PIN NO.	I/O	SYMBOL	PIN NO.	I/O	SYMBOL	PIN NO.	I/O	SYMBOL	PIN NO.	I/O	SYMBOL
1	I/O	FCS	13	O	FPD	25	O	HD	37	I	YMCK
2	I/O	CPO	14	O	RPD	26	O	VD	38	O	TST3
3	I	SLI	15	I	MCKI	27	O	AFH	39	I/O	XXA
4	I	STL	16	O	YO	28	O	YHD	40	I/O	IR1
5	I	VSIN	17	O	MCKO	29	O	CHD	41	I	JOG
6	–	GND	18	–	GND	30	O	HLFH	42	–	GND
7	I	CMPI	19	–	V_{DD}	31	–	GND	43	–	V_{DD}
8	I	FCL	20	I	XHLD	32	O	WEVN	44	I	POS
9	I	VCIN	21	O	TC	33	I	CLR	45	O	XRES
10	I	PWM	22	I	MMT	34	I	TST2	46	I	RFSW
11	O	PEO	23	O	BFP	35	I	TST1	47	I	XVDT
12	–	GND	24	O	WIND	36	I	TST0	48	O	CSYN

CXD1227Q (SONY)

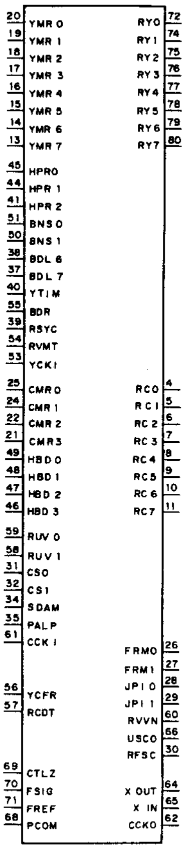
C-MOS DIGITAL CHROMA ENCODER／VERTICAL ENHANCER

– TOP VIEW –


64
60
55
50
45
41
65
40
70
35
75
30
80
25
1
5
10
15
20
24
GND
GND
GND
GND
GND
GND
V_{DD} (+5V)
V_{DD} (+5V)

PIN ASSIGNMENT (V_{DD} = + 5V)

PIN NO.	I/O	SYMBOL	PIN NO.	I/O	SYMBOL	PIN NO.	I/O	SYMBOL	PIN NO.	I/O	SYMBOL
1	O	TST0	21	I	CMR3	41	I	HPR2	61	I	CCKI
2	–	GND	22	I	CMR2	42	–	GND	62	O	CCKO
3	O	TST1	23	–	GND	43	O	DOC	63	–	GND
4	O	RC0	24	I	CMR1	44	I	HPR1	64	O	XOUT
5	O	RC1	25	I	CMR0	45	I	HPR0	65	I	XIN
6	O	RC2	26	O	FRM0	46	I	HBD3	66	O	USCO
7	O	RC3	27	O	FRM1	47	I	HBD2	67	I	CLRI
8	O	RC4	28	O	JPI0	48	I	HBD1	68	O	PCOM
9	O	RC5	29	O	JPI1	49	I	HBD0	69	I	CTLZ
10	O	RC6	30	O	RFSC	50	I	BNS1	70	I	FSIG
11	O	RC7	31	I	CS0	51	I	BNS0	71	I	FREF
12	–	GND	32	I	CS1	52	–	GND	72	O	RY0
13	I	YMR7	33	–	V_{DD}	53	I	YCKI	73	–	V_{DD}
14	I	YMR6	34	I	SDAM	54	I	RVMT	74	O	RY1
15	I	YMR5	35	I	PALP	55	I	BDR	75	O	RY2
16	I	YMR4	36	I	OFSB	56	I	YCFR	76	O	RY3
17	I	YMR3	37	I	BDL7	57	I	RCDT	77	O	RY4
18	I	YMR2	38	I	BDL6	58	I	RUV1	78	O	RY5
19	I	YMR1	39	I	RSYC	59	I	RUV0	79	O	RY6
20	I	YMR0	40	I	YTIM	60	O	REVN	80	O	RY7


20 YMR0
19 YMR1
18 YMR2
17 YMR3
16 YMR4
15 YMR5
14 YMR6
13 YMR7
45 HPR0
44 HPR1
41 HPR2
51 BNS0
50 BNS1
38 BDL6
37 BDL7
40 YTIM
55 BDR
39 RSYC
54 RVMT
53 YCKI
25 CMR0
24 CMR1
22 CMR2
21 CMR3
49 HBD0
48 HBD1
47 HBD2
46 HBD3
59 RUV0
58 RUV1
31 CS0
32 CS1
34 SDAM
35 PALP
61 CCKI
56 YCFR
57 RCDT
69 CTLZ
70 FSIG
71 FREF
68 PCOM
RY0 72
RY1 74
RY2 75
RY3 76
RY4 77
RY5 78
RY6 79
RY7 80
RC0 4
RC1 5
RC2 6
RC3 7
RC4 8
RC5 9
RC6 10
RC7 11
FRM0 26
FRM1 27
JPI0 28
JPI1 29
RVVN 60
USCO 66
RFSC 30
X OUT 64
X IN 65
CCKO 62

INPUT

BDR : BORDER TIMING INPUT
* 1 BDL6, 7 : Y BORDER LEVEL SELECT INPUTS
* 2 BNS0, 1 : SOLORIZATION RESOLUTION SELECT
CCKI : CHROMA CLOCK INPUT (4fsc)
CLRI : CLEAR INPUT
CMR0 – 3 : CHROMA DATA INPUTS
* 3 CS0, 1 : CHROMA SYSTEM SELECT INPUTS
CTLZ : PHASE COMPARATOR OUT CONTROL INPUT
FREF : PHASE COMPARATOR REFERRENCE SIGNAL INPUT
FSIG : PHASE COMPARATOR SIGNAL INPUT
* 4 HBD0, 1 : U-AXIS BORDER LEVEL INPUTS
* 5 HBD2, 3 : V-AXIS BORDER LEVEL INPUTS
* 6 HPR0 – 2 : H PROCESS INPUTS
OFSB : OFF SET BINARY MODE INPUT
PALP : PAL PHASE CONTROL INPUT
RCDT : READ FRAMING CODE TIMING INPUT
RSYC : READ SYNC INPUT
RUV0 – 1 : READ U／V TIMING INPUTS
RVMT : READ VIDEO MUTE INPUT
SDAM : D／A MODE SELECT INPUT
XIN : CHROMA CLOCK INPUT FOR OSCILLATOR
YCKI : Y CLOCK INPUT ($910f_H$)
YCFR : Y／C FRAMING ON／OFF SELECT INPUT
YMR0 – 7 : Y DATA INPUTS
YTIM : Y TIMING CONTROL INPUT

OUTPUT

CCKO : CHROMA CLOCK OSCILLATOR OUTPUT (4fsc)
DOC : DROP OUT CONTROL MONITOR OUTPUT
FRM0, 1 : CHROMA FRAMING CODE OUTPUTS
JPI0, 1 : ID CODE MONITOR OUTPUTS (D2, D3)
PCOM : PHASE COMPARATOR OUTPUT
RC0 – 7 : READ CHROMA D／A OUTPUTS
REVN : READ EVEN／$\overline{\text{ODD}}$ FIELD MONITOR OUTPUT
RFSC : READ fsc OUTPUT
RY0 – 7 : READ Y D／A OUTPUTS
TST0, 1 : TEST TERMINALS
USCO : USER CODE FOR OPTION
XOUT : CHROMA CLOCK OUTPUT FOR OSCILLATOR

TABLE 1
* 1 BORDER LEVEL

BDL7	BDL6	LEVEL · I
0	0	8H (– 50IRE)
0	1	48H (– 100IRE)
1	0	C8H (CLAMP LEVEL)
1	1	C8H (0IRE)

TABLE 2
* 2 SOLORIZATION RESOLUTION

INPUTS		OUTPUTS				
BNS0	BNS1	RY0	RY1	RY2	RY3	RY4
0	0	0	0	1	X	X
0	1	0	0	0	1	X
1	0	0	0	0	0	1
1	1	X	X	X	X	X

TABLE 3
* 3 CHROMA SYSTEM MODE SELECTION

CS1	CS0	MODE
0	0	NTSC
0	1	PAL
1	0	CHROMA BASE BAND OUT
1	1	(PAL)

TABLE 4
* 4 U-AXIS BORDER LEVEL

HBD1	HBD0	LEVEL
0	0	20 IRE
0	1	– 20 IRE
1	0	– 30 IRE
1	1	0 IRE

TABLE 5
* 5 V-AXIS BORDER LEVEL

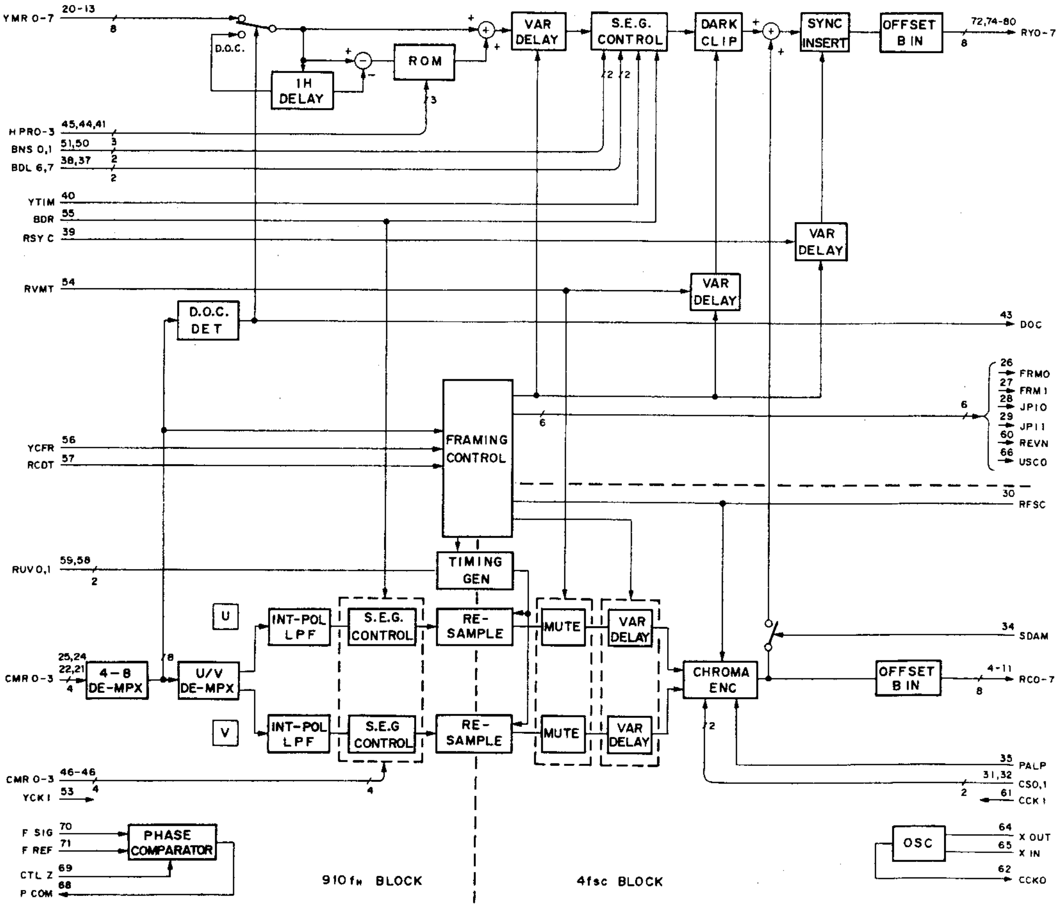
HBD3	HBD2	LEVEL
0	0	20 IRE
0	1	– 20 IRE
1	0	– 30 IRE
1	1	0 IRE

TABLE 6
* 6 H PROCESS MODE SELECTION

HPR2	HPR1	HPR0	OPERATION
0	0	0	V-ENHANCE (SOFT)
0	0	1	V-ENHANCE (SOFT)
0	1	0	V-ENHANCE (MIDDLE)
0	1	1	V-ENHANCE (STRONG)
1	0	0	MIX RATIO H_T:H_P=1:1
1	0	1	MIX RATIO H_T:H_P=1:3
1	1	0	MIX RATIO H_T:H_P=3:1
1	1	1	NO PLAY

0 : LOW LEVEL
1 : HIGH LEVEL

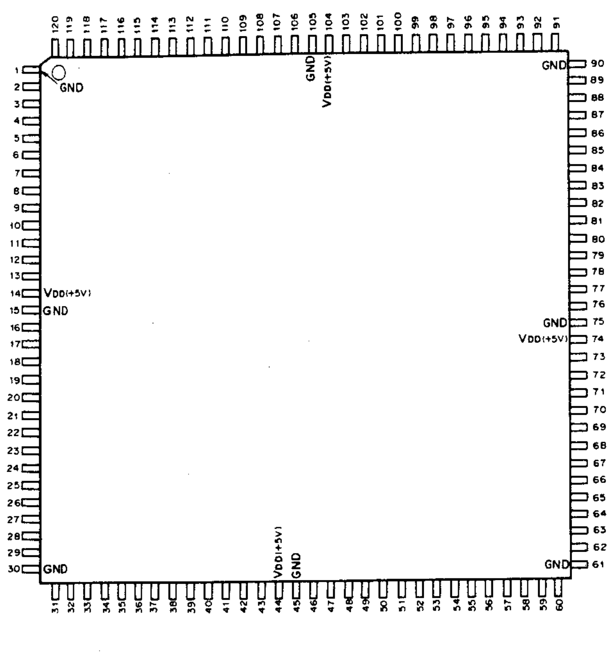
H_T = THROUGH
H_P = 1H DELAY

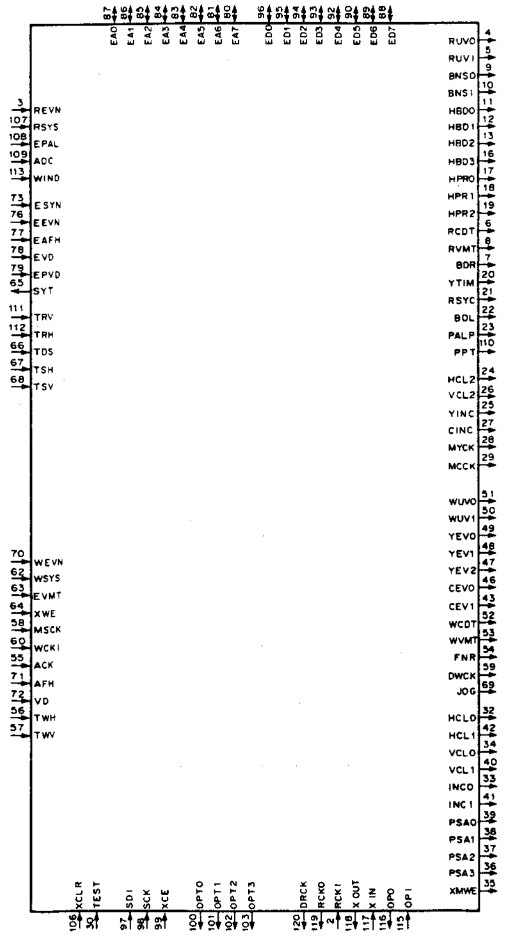

YMR 0-7 20-13 8
D.O.C.
1H DELAY
ROM
VAR DELAY
S.E.G. CONTROL
DARK CLIP
SYNC INSERT
OFFSET B IN
72,74-80 8 RY0-7
H PR0-3 45,44,41 3
BNS 0,1 51,50 2
BDL 6,7 38,37 2
YTIM 40
BDR 55
RSY C 39
VAR DELAY
RVMT 54
VAR DELAY
D.O.C. DET
43 DOC
26 FRM0
27 FRM1
28 JPI0
29 JPI1
60 REVN
66 USCO
6
YCFR 56
RCDT 57
FRAMING CONTROL
30 RFSC
RUV 0,1 59,58 2
TIMING GEN
U
V
INT-POL LPF
S.E.G. CONTROL
RE-SAMPLE
MUTE
VAR DELAY
34 SDAM
CMR 0-3 25,24 22,21 4
4-8 DE-MPX
U/V DE-MPX
CHROMA ENC
OFFSET B IN
4-11 8 RC0-7
35 PALP
31,32 2 CS0,1
61 CCK I
CMR 0-3 46-46 4
YCK I 53
F SIG 70
F REF 71
CTL Z 69
P COM 68
PHASE COMPARATOR
910fH BLOCK
4fsc BLOCK
OSC
64 X OUT
65 X IN
62 CCKO

CXD1228Q (SONY) FLAT PACKAGE

C-MOS MEMORY ADDRESS CONTROLLER

– TOP VIEW –


GND
VDD(+5V)
GND
VDD(+5V)
GND
VDD(+5V)
GND
GND


REVN
RSYS
EPAL
ADC
WIND
ESYN
EEVN
EAFH
EVD
EPVD
SYT
TRV
TRH
TDS
TSH
TSV
WEVN
WSYS
EVMT
XWE
MSCK
WCKI
ACK
AFH
VD
TWH
TWV
RUV0
RUV1
BNS0
BNS1
HBD0
HBD1
HBD2
HBD3
HPR0
HPR1
HPR2
RCDT
RVMT
BDR
YTIM
RSYC
BDL
PALP
PPT
HCL2
VCL2
YINC
CINC
MYCK
MCCK
WUV0
WUV1
YEV0
YEV1
YEV2
CEV0
CEV1
WCDT
WVMT
FNR
DWCK
JOG
HCL0
HCL1
VCL0
VCL1
INC0
INC1
PSA0
PSA1
PSA2
PSA3
XMWE
XCLR
TEST
SDI
SCK
XCE
OPT0
OPT1
OPT2
OPT3
DRCK
RCKO
RCKI
X OUT
X IN
OPO
OPI

PIN NO.	I/O	SYMBOL	PIN NO.	I/O	SYMBOL	PIN NO.	I/O	SYMBOL	PIN NO.	I/O	SYMBOL
1	–	GND	31	–	GND	61	–	GND	91	–	GND
2	I	RCK1	32	O	HCL0	62	I	WSYS	92	I/O	ED4
3	I	REVN	33	O	INC0	63	I	EVMT	93	I/O	ED3
4	O	RUV0	34	O	VCL0	64	I	XWE	94	I/O	ED2
5	O	RUV1	35	O	XMWE	65	O	SYT	95	I/O	ED1
6	O	RCDT	36	O	PSA3	66	I	TDS	96	I/O	ED0
7	O	BDR	37	O	PSA2	67	I	TSH	97	I	SD1
8	O	RVMT	38	O	PSA1	68	I	TSV	98	I	SDK
9	O	BNS0	39	O	PSA0	69	O	JOG	99	I	XCE
10	O	BNS1	40	O	VCL1	70	I	WEVN	100	O	OPT0
11	O	HBD0	41	O	INC1	71	I	AFH	101	O	OPT1
12	O	HBD1	42	O	HCL1	72	I	VD	102	O	OPT2
13	O	HBD2	43	O	CEV1	73	I	ESYN	103	O	OPT3
14	–	VDD (+5V)	44	–	VDD (+5V)	74	–	VDD (+5V)	104	–	VDD (+5V)
15	–	GND	45	–	GND	75	–	GND	105	–	GND
16	O	HBD3	46	O	CEV0	76	I	EEVN	106	I	XCLR
17	O	HPR0	47	O	YEV2	77	I	EAFH	107	I	RSYS
18	O	HPR1	48	O	YEV1	78	I	EVD	108	I	EPAL
19	O	HPR2	49	O	YEV0	79	I	EPVD	109	I	ADC
20	O	YTIM	50	O	WUV1	80	I/O	EA7	110	O	PPT
21	O	RSYC	51	O	WUV0	81	I/O	EA6	111	I	TRV
22	O	BDL	52	O	WCDT	82	I/O	EA5	112	I	TRH
23	O	PALP	53	O	WVMT	83	I/O	EA4	113	I	WIND
24	O	HCL2	54	O	FNR	84	I/O	EA3	114	O	VPER
25	O	YINC	55	I	ACK	85	I/O	EA2	115	I	OPI
26	O	VCL2	56	I	TWH	86	I/O	EA1	116	O	OPO
27	O	CINC	57	I	TWV	87	I/O	EA0	117	I	XIN
28	O	MYCK	58	I	MSCK	88	I/O	ED7	118	O	XOUT
29	O	MCCK	59	O	DWCK	89	I/O	ED6	119	O	RCKO
30	I	TST	60	I	WCKI	90	I/O	ED5	120	O	DRCK

INPUT

ACK : CLOCK INPUT FOR APC (H : B/W MODE. L : COLOR MODE)
ADC : CHROMA ADDRESS CONTROL INPUT
AFH : AFC H DRIVE INPUT
EAFH : EXTERNAL SYNC MODE H DRIVE INPUT
EEVN : EXTERNAL SYNC MODE EVEN/ODD SELECT INPUT
EPAL : EXTERNAL SYNC MODE PAL COLOR ID INPUT
EPVD : REFERENCE VD
ESYN : EXTERNAL SYNC MODE CHROMA SYNC INPUT
EVD : EXTERNAL SYNC MODE V DRIVE INPUT
EVMT : EXTERNAL VIDEO MUTE INPUT (H : MUTE. L : NORMAL)
MSCK : MASTER CLOCK INPUT
OPI : INVERTER INPUT
RCKI : READ CLOCK INPUT
REVN : READ EVEN/ODD FIELD MONITOR INPUT
RSYS : READ SYNC SELECT INPUT (H : NTSC. L : PAL)
SDI : SERIAL DATA INPUT
SDK : SERIAL CLOCK INPUT
TDS. TRH. TRV. TSH
TST. TSV. TWH. TWV
: TEST PIN
VD : VERTICAL SYNC DETECT INPUT
WCKI : WRITE CLOCK INPUT
WEVN : WRITE EVEN/ODD FIELD MONITOR INPUT
WIND : WINDOW COMPARATOR INPUT FOR V-PLL
WSYS : WRITE SYNC SELECT INPUT (H : NTSC. L : PAL)
XCE : CHIP ENABLE INPUT
XCLR : DIRECT CLEAR INPUT
XIN : CLOCK INPUT
XWE : WRITE ENABLE INPUT

OUTPUT

BDL : Y BORDER LEVEL OUTPUT
BDR : BORDER OUTPUT
*1 BNS0. 1 : SOLARIZATION CONROL OUTPUTS
*2 CEV0. 1 : C NOISE REDUCER MODE SELECT OUTPUTS
CINC : READ PORT CHROMA INCREMENT OUTPUT
DRCK : DELAYED READ CLOCK OUTPUT
DWCK : DELAYED WRITE CLOCK OUTPUT
FNR : NOISE REDUCER ON/OFF CONTROL OUTPUT
*3 HBD0. 1 : U-AXIS BORDER LEVEL OUTPUTS
*4 HBD2. 3 : V-AXIS BORDER LEVEL OUTPUTS
HCL0 : WRITE PORT HORIZONTAL CLEAR OUTPUT
HCL1. 2 : READ PORT HORIZONTAL CLEAR OUTPUTS
*5 HPR0 – HPR2 : H PROCESS OUTPUTS
INC0 : WRITE PORT LINE INCREMENT OUTPUT
INC1 : READ PORT LINE INCREMENT OUTPUT
JOG : REFERENCE CONTROL OUTPUT
MCCK : READ PORT CHROMA CLOCK OUTPUT
MYCK : READ PORT Y CLOCK OUTPUT
OPO : INVERTER OUTPUT
OPT0 – OPT3 : OPTION OUTPUTS
PALP : PAL PHASE CONTROL OUTPUT
PPT : SMALL PICTURE TIMING OUT
PSA0 – PSA3 : WRITE PORT TRANSFER SYNC OUTPUTS
RCDT : READ FRAIMIG CODE TIMING OUTPUT
RCK0 : READ CLOCK OUTPUT
RUV0. 1 : READ U/V TIMING OUTPUTS
RVMT : READ MUTING OUTPUT
SYT : MONITOR PIN FOR TEST
VCL0 : WRITE PORT VERTICAL CLEAR OUTPUT
VCL1. 2 : READ PORT VERTICAL CLEAR OUTPUTS
VPER : V PHASE COMPARATOR OUTPUT
WCDT : WRITE FRAMING CODE TIMING OUTPUT
WUV0. 1 : WRITE U/V TIMING OUTPUTS
WVMT : WRITE VIDEO MUTE OUTPUT
XMWE : WRITE PORT WRITE ENABLE OUTPUT
XOUT : CLOCK OUTPUT
*6 YEV0 – YEV2 : Y NOISE REDUCER MODE SELECT OUTPUTS
YINC : READ PORT Y INCREMENT OUTPUT
YTIM : Y TIMING CONTROL OUTPUT

INPUT/OUTPUT

EA0 – EA7 : ROM TEST TERMINAL INPUTS/OUTPUTS
ED0 – ED7 : ROM TEST TERMINAL INPUTS/OUTPUTS

*1 SOLORIZATION RESOLUTION

INPUTS		OUTPUTS				
BNS0	BNS1	RY0	RY1	RY2	RY3	RY4
0	0	0	0	1	X	X
0	1	0	0	0	1	X
1	0	0	0	0	0	1
1	1	X	X	X	X	X

*2 CHROMA SIGNAL NOISE REDUCER SELECTION

CEV0	CEV1	OPERATION
0	0	NOISE REDUCER (SOFT)
0	1	NOISE REDUCER (MIDDLE)
1	0	NOISE REDUCER (STRONG)
1	1	NO OPERATION

*3 U-AXIS BORDER LEVEL

HBD1	HBD0	LEVEL
0	0	20 IRE
0	1	– 20 IRE
1	0	– 30 IRE
1	1	0 IRE

*4 V-AXIS BORDER LEVEL

HBD3	HBD2	LEVEL
0	0	20 IRE
0	1	– 20 IRE
1	0	– 30 IRE
1	1	0 IRE

*5 H PROCESS MODE SELECTION

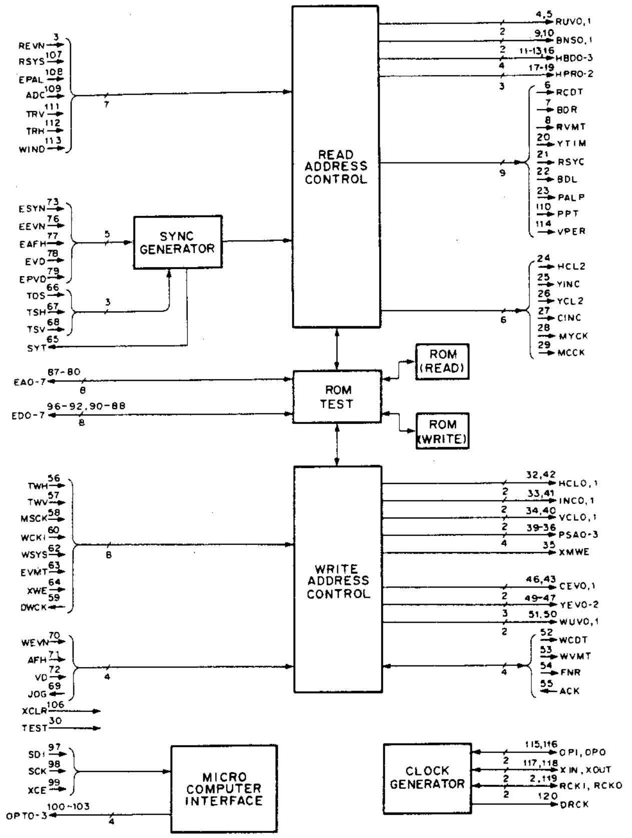
HPR2	HPR1	HPR0	OPERATION
0	0	0	V-ENHANCE (SOFT)
0	0	1	V-ENHANCE (SOFT)
0	1	0	V-ENHANCE (MIDDLE)
0	1	1	V-ENHANCE (STRONG)
1	0	0	MIX RATIO $H_T:H_P=1:1$
1	0	1	MIX RATIO $H_T:H_P=1:3$
1	1	0	MIX RATIO $H_T:H_P=3:1$
1	1	1	NO PLAY

0 : LOW LEVEL
1 : HIGH LEVEL

H_T = THROUGH
H_P = 1H DELAY

*6 Y SIGNAL NOISE REDUCER SELECTION

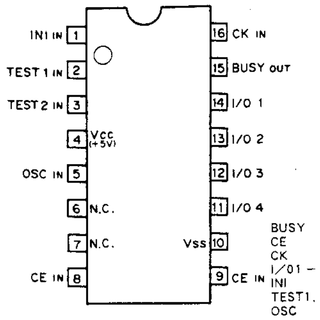
YEV0	YEV1	YEV2	OPERATION
0	0	0	NOISE REDUCER (SOFT)
0	0	1	NOISE REDUCER (MIDDLE)
0	1	0	NOISE REDUCER (STRONG)
0	1	1	AFTER IMAGE
1	0	0	VERTICAL FILTER
1	0	1	FADE IN/OUT
1	1	0	SELECT AFTER IMAGE
1	1	1	NO OPERATION

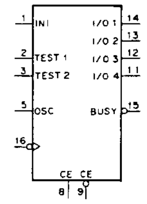

REVN 3
RSYS 107
EPAL 108
ADC 109
TRV 111
TRH 112
WIND 113
7
READ ADDRESS CONTROL
ESYN 73
EEVN 76
EAFH 77
EVD 78
EPVD 79
5
SYNC GENERATOR
TDS 66
TSH 67
TSV 68
3
SYT 65
4,5 RUV0,1
9,10 BNS0,1
11-13,16 HBD0-3
17-19 HPR0-2
6 RCDT
7 BDR
8 RVMT
20 YTIM
21 RSYC
22 BDL
23 PALP
110 PPT
114 VPER
24 HCL2
25 YINC
26 YCL2
27 CINC
28 MYCK
29 MCCK
EA0-7 87-80
ED0-7 96-92,90-88
ROM TEST
ROM (READ)
ROM (WRITE)
TWH 56
TWV 57
MSCK 58
WCKI 60
WSYS 62
EVMT 63
XWE 64
DWCK 59
WRITE ADDRESS CONTROL
32,42 HCL0,1
33,41 INC0,1
34,40 VCL0,1
39-36 PSA0-3
35 XMWE
46,43 CEV0,1
49-47 YEV0-2
51,50 WUV0,1
52 WCDT
53 WVMT
54 FNR
55 ACK
WEVN 70
AFH 71
VD 72
JOG 69
XCLR 106
TEST 30
SDI 97
SCK 98
XCE 99
OPT0-3 100-103
MICRO COMPUTER INTERFACE
CLOCK GENERATOR
115,116 OPI, OPO
117,118 X IN, XOUT
2,119 RCKI, RCKO
120 DRCK

CXK1009P (SONY)

N-MOS 2048BIT(128x16) E²PROM

– TOP VIEW –

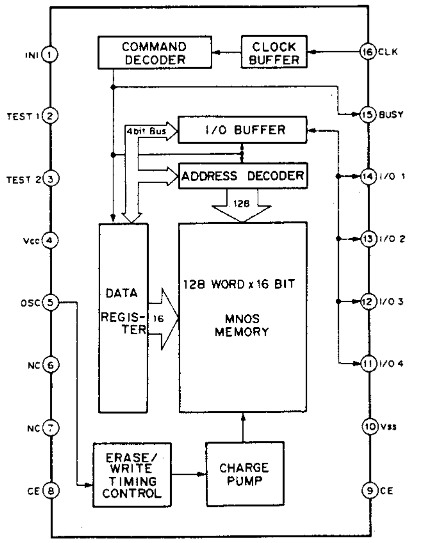

INI IN 1
TEST 1 IN 2
TEST 2 IN 3
4 Vcc (+5V)
OSC IN 5
6 N.C.
7 N.C.
CE IN 8
9 CE IN
Vss 10
11 I/O 4
12 I/O 3
13 I/O 2
14 I/O 1
15 BUSY OUT
16 CK IN


1 INI
2 TEST 1
3 TEST 2
5 OSC
16
I/O 1 14
I/O 2 13
I/O 3 12
I/O 4 11
BUSY 15
CE CE
8 9

BUSY : BUSY SIGNAL OUTPUT
CE : CHIP ENABLE INPUT
CK : PROCESSOR CLOCK
I/01 – I/04 : ADDRESS/DATA INPUTS/OUTPUTS
INI : INITIALIZE INPUT
TEST1, TEST2 : CONNECTED TO V_{DD}
OSC : OSCILLATOR INPUT

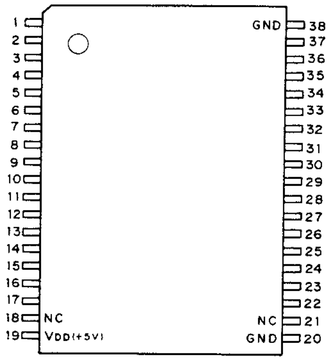
INPUT					FUNCTION
CE	I/01	I/02	I/03	I/04	
0	0	0	1	0	READ
0	1	0	1	0	WRITE
0	X	X	0	0	NO OPERATION
0	X	X	0	1	NO OPERATION
0	X	X	1	1	NO OPERATION
1	X	X	X	X	NO OPERATION

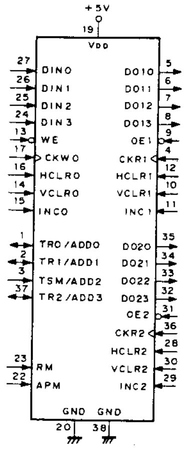
0 : LOW LEVEL
1 : HIGH LEVEL
X : DON'T CARE

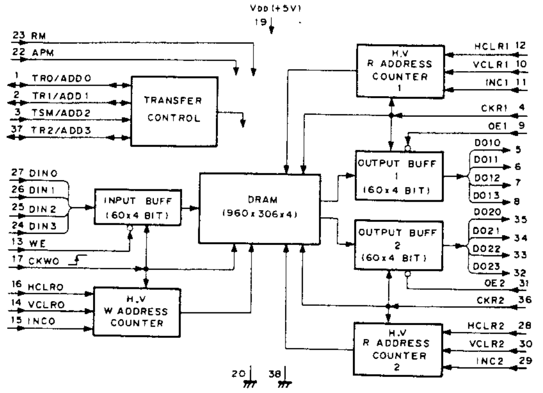

INI 1
TEST 1 2
TEST 2 3
Vcc 4
OSC 5
NC 6
NC 7
CE 8
16 CLK
15 BUSY
14 I/O 1
13 I/O 2
12 I/O 3
11 I/O 4
10 Vss
9 CE
COMMAND DECODER
CLOCK BUFFER
4bit Bus
I/O BUFFER
ADDRESS DECODER
128
DATA REGISTER
16
128 WORD x 16 BIT MNOS MEMORY
ERASE/WRITE TIMING CONTROL
CHARGE PUMP

CXK1206M (SONY) FLAT PACKAGE

C-MOS VIDEO FIELD MEMORY (960-COLUMNx306-ROWx4-BIT)
– TOP VIEW –


GND
NC
NC
VDD(+5V)
GND


+5V
VDD
DIN0
DIN1
DIN2
DIN3
WE
CKW0
HCLR0
VCLR0
INC0
TR0/ADD0
TR1/ADD1
TSM/ADD2
TR2/ADD3
RM
APM
DO10
DO11
DO12
DO13
OE1
CKR1
HCLR1
VCLR1
INC1
DO20
DO21
DO22
DO23
OE2
CKR2
HCLR2
VCLR2
INC2
GND GND


VDD(+5V)
RM
APM
TR0/ADD0
TR1/ADD1
TSM/ADD2
TR2/ADD3
TRANSFER CONTROL
DIN0
DIN1
DIN2
DIN3
WE
CKW0
INPUT BUFF (60x4 BIT)
DRAM (960x306x4)
H.V R ADDRESS COUNTER 1
OUTPUT BUFF 1 (60x4 BIT)
OUTPUT BUFF 2 (60x4 BIT)
HCLR0
VCLR0
INC0
H.V W ADDRESS COUNTER
H.V R ADDRESS COUNTER 2
HCLR1
VCLR1
INC1
CKR1
OE1
DO10
DO11
DO12
DO13
DO20
DO21
DO22
DO23
OE2
CKR2
HCLR2
VCLR2
INC2

PIN	SIGNAL	DESCRIPTION
1	TR0/ADD0	W PORT 0 TRANSFER SYNC I/O, ADDRESS 0 INPUT
2	TR1/ADD1	R PORT 1 TRANSFER SYNC I/O, ADDRESS 1 INPUT
3	TSM/ADD2	TRANSFER SYNCHRONOUS MODE, ADDRESS 2 INPUT
4	CKR1	R PORT 1 SHIFT SIGNAL INPUT
5	DO10	R PORT 1 DATA 0 OUTPUT
6	DO11	R PORT 1 DATA 1 OUTPUT
7	DO12	R PORT 1 DATA 2 OUTPUT
8	DO13	R PORT 1 DATA 3 OUTPUT
9	OE1	R PORT 1 OUTPUT ENABLE INPUT
10	VCLR1	R PORT 1 VERTICAL CLEAR INPUT
11	INC1	R PORT 1 LINE INCREMENT INPUT
12	HCLR1	R PORT 1 HORIZONTAL CLEAR INPUT
13	WE	W PORT 0 WRITE ENABLE INPUT
14	VCLR0	W PORT 0 VERTICAL CLEAR INPUT
15	INC0	W PORT 0 LINE INCREMENT INPUT
16	HCLR0	W PORT 0 HORIZONTAL CLEAR INPUT
17	CKW0	W PORT 0 SHIFT SIGNAL INPUT
18	NC	(no connection)
19	VDD	+5V INPUT
20	GND	GND
21	NC	(no connection)
22	APM	ADDRESS PRESET MODE INPUT
23	RMM	RECURSIVE MODE ENABLE INPUT
24	DIN3	W PORT 0 DATA 3 INPUT
25	DIN2	W PORT 0 DATA 2 INPUT
26	DIN1	W PORT 0 DATA 1 INPUT
27	DIN0	W PORT 0 DATA 0 INPUT
28	HCLR2	R PORT 2 HORIZONTAL CLEAR INPUT
29	INC2	R PORT 2 LINE INCREMENT INPUT
30	VCLR2	R PORT 2 VERTICAL CLEAR INPUT
31	OE2	R PORT 2 OUTPUT ENABLE INPUT
32	DO23	R PORT 2 DATA 3 OUTPUT
33	DO22	R PORT 2 DATA 2 OUTPUT
34	DO21	R PORT 2 DATA 1 OUTPUT
35	DO20	R PORT 2 DATA 0 OUTPUT
36	CKR2	R PORT 2 SHIFT SIGNAL INPUT
37	TR2/ADD3	R PORT 2 TRANSFER SYNC I/O, ADDRESS 3 INPUT
38	GND	GND

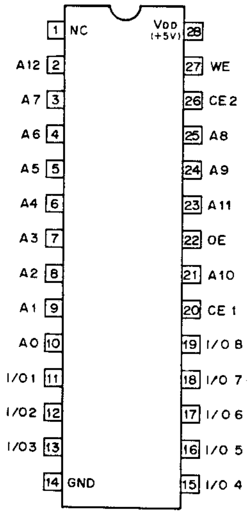
MODE SELECTION

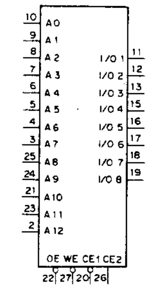
CONTROL INPUTS		TS, TR/ADD			MODE
RM	APM	TSM	TR 0-2	ADD 0-3	
0	0	0	OUT PUT	-	NON RECURSIVE MODE, TRANSFER SYNCHRONOUS MODE OUTPUT
0	0	1	IN-PUT	-	NON RECURSIVE MODE, TRANSFER SYNCHRONOUS MODE INPUT
0	1	-	-	IN-PUT	NON RECURSIVE MODE, ADDRESS PRESET MODE
1	0	0	OUT PUT	-	RECURSIVE MODE, TRANSFER SYNCHRONOUS MODE OUTPUT
1	0	1	IN-PUT	-	RECURSIVE MODE, TRANSFER SYNCHRONOUS MODE INPUT

0:LOW LEVEL 1:HIGH LEVEL

CXK5864BM-12L (SONY) (ACCESS TIME = 120nS)
CXK5864BP-10L (SONY) (ACCESS TIME = 100nS)

C-MOS 64K(8192x8)-BIT STATIC RAM
– TOP VIEW –

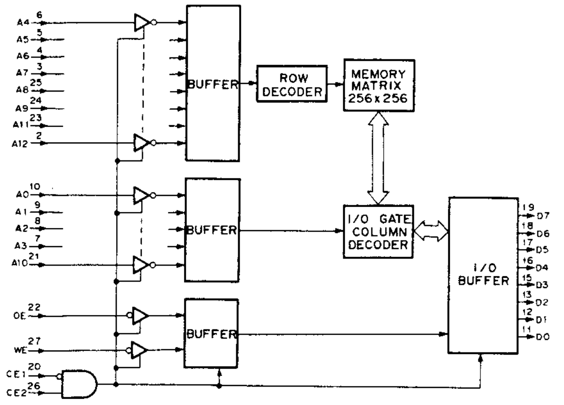

1 NC
2 A12
3 A7
4 A6
5 A5
6 A4
7 A3
8 A2
9 A1
10 A0
11 I/O1
12 I/O2
13 I/O3
14 GND
15 I/O 4
16 I/O 5
17 I/O 6
18 I/O 7
19 I/O 8
20 CE 1
21 A10
22 OE
23 A11
24 A9
25 A8
26 CE2
27 WE
28 VDD (+5V)


A0
A1
A2
A3
A4
A5
A6
A7
A8
A9
A10
A11
A12
I/O 1
I/O 2
I/O 3
I/O 4
I/O 5
I/O 6
I/O 7
I/O 8
OE WE CE1 CE2

A0-A12 ; ADDRESS INPUT
CE1, CE2 ; CHIP ENABLE INPUT
I/O1-I/O8 ; DATA INPUT/OUTPUT
OE ; OUTPUT ENABLE INPUT
WE ; WRITE ENABLE INPUT

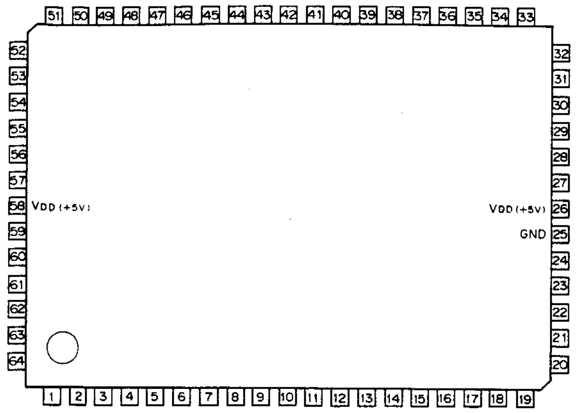
CE1	CE2	OE	WE	MODE	I/O TERMINAL
1	X	X	X	NOT SELECT	HIGH IMPEDANCE
X	0	X	X	NOT SELECT	HIGH IMPEDANCE
0	1	1	1	OUTPUT DISABLE	HIGH IMPEDANCE
0	1	0	1	READ	OUTPUT DATA
0	1	X	0	WRITE	INPUT DATA

0;LOW LEVEL
1;HIGH LEVEL
X;DON'T CARE


A4
A5
A6
A7
A8
A9
A11
A12
BUFFER
ROW DECODER
MEMORY MATRIX 256x256
A0
A1
A2
A3
A10
BUFFER
I/O GATE COLUMN DECODER
I/O BUFFER
OE
WE
CE1
CE2
BUFFER
D7
D6
D5
D4
D3
D2
D1
D0

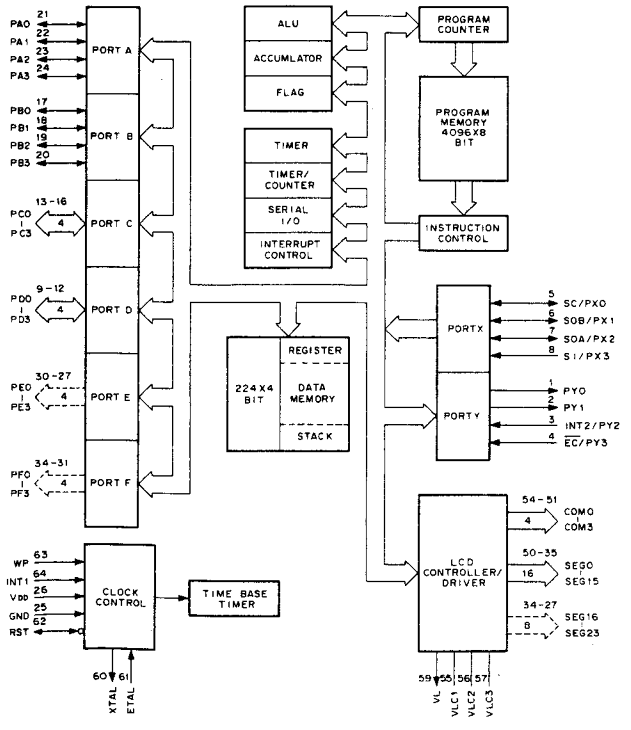
CXP5024H- ? ? ?Q (SONY) FLAT PACKAGE

C-MOS 4-BIT MICROCOMPUTER
– TOP VIEW –


VDD (+5V)
VDD (+5V)
GND

(V_{DD} = + 5V)

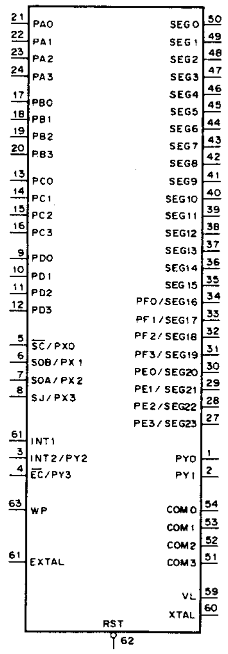
PIN NO.	I/O	SYMBOL	PIN NO.	I/O	SYMBOL	PIN NO.	I/O	SYMBOL	PIN NO.	I/O	SYMBOL
1	O	RY0	17	I/O	PB0	33	O	PF1/SEG17	49	O	SEG1
2	O	RY1	18	I/O	PB1	34	O	PF0/SEG16	50	O	SEG0
3	I	INT2/PY2	19	I/O	PB2	35	O	SEG15	51	O	COM3
4	I	$\overline{EC}$/PY3	20	I/O	PB3	36	O	SEG14	52	O	COM2
5	I/O	$\overline{SC}$/PX0	21	I/O	PA0	37	O	SEG13	53	O	COM1
6	I/O	SOB/PX1	22	I/O	PA1	38	O	SEG12	54	O	COM0
7	I/O	SOA/PX2	23	I/O	PA2	39	O	SEG11	55	–	V_{LC1}
8	I	SI/PX3	24	I/O	PA3	40	O	SEG10	56	–	V_{LC2}
9	I/O	PD0	25	–	Vss (GND)	41	O	SEG9	57	–	V_{LC3}
10	I/O	PD1	26	–	V_{DD}	42	O	SEG8	58	–	V_{DD}
11	I/O	PD2	27	O	PE3/SEG23	43	O	SEG7	59	O	V_L
12	I/O	PD3	28	O	PE2/SEG22	44	O	SEG6	60	O	XTAL
13	I/O	PC0	29	O	PE1/SEG21	45	O	SEG5	61	I	EXTAL
14	I/O	PC1	30	O	PE0/SEG20	46	O	SEG4	62	I/O	RST
15	I/O	PC2	31	O	PF3/SEG19	47	O	SEG3	63	I	WP
16	I/O	PC3	32	O	PF2/SEG18	48	O	SEG2	64	I	INT1

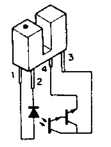

PA0
PA1
PA2
PA3
PORT A
PB0
PB1
PB2
PB3
PORT B
PC0
PC3
PORT C
PD0
PD3
PORT D
PE0
PE3
PORT E
PF0
PF3
PORT F
ALU
ACCUMLATOR
FLAG
TIMER
TIMER/COUNTER
SERIAL I/O
INTERRUPT CONTROL
PROGRAM COUNTER
PROGRAM MEMORY 4096X8 BIT
INSTRUCTION CONTROL
REGISTER
224X4 BIT
DATA MEMORY
STACK
PORTX
PORTY
SC/PX0
SOB/PX1
SOA/PX2
SI/PX3
PY0
PY1
INT2/PY2
EC/PY3
WP
INT1
VDD
GND
RST
CLOCK CONTROL
TIME BASE TIMER
XTAL
ETAL
LCD CONTROLLER/DRIVER
COM0
COM3
SEG0
SEG15
SEG16
SEG23
VL
VLC1
VLC2
VLC3

INPUT
EC : EVENT COUNT CLOCK INPUT
EXTAL : CLOCK INPUT
INT1 – INT2 : INTERRUPT INPUTS
RST : RESET
SC : SERIAL CLOCK
SI : SERIAL INPUT
WP : WAKE UP INPUT

OUTPUT
COM0 – COM3 : COMON OUTPUTS
SEG0 – SEG23 : SEGMENT OUTPUTS
SOA, B : SERIAL OUTPUTS
VL : CUTOFF
XTAL : CLOCK OUTPUT

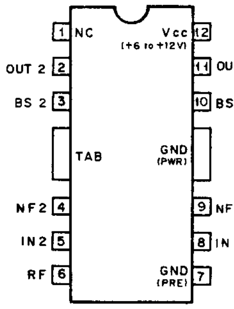
INPUT/OUTPUT
PA0 – PA3 : PORT A
PB0 – PB3 : PORT B
PC0 – PC3 : PORT C
PD0 – PD3 : PORT D
PE0 – PE3 : PORT E
PF0 – PF3 : PORT F
PX0 – PX3 : PORT X
PY0 – PY3 : PORT Y


PA0
PA1
PA2
PA3
PB0
PB1
PB2
PB3
PC0
PC1
PC2
PC3
PD0
PD1
PD2
PD3
SC/PX0
SOB/PX1
SOA/PX2
SJ/PX3
INT1
INT2/PY2
EC/PY3
WP
EXTAL
SEG0
SEG1
SEG2
SEG3
SEG4
SEG5
SEG6
SEG7
SEG8
SEG9
SEG10
SEG11
SEG12
SEG13
SEG14
SEG15
PF0/SEG16
PF1/SEG17
PF2/SEG18
PF3/SEG19
PE0/SEG20
PE1/SEG21
PE2/SEG22
PE3/SEG23
PY0
PY1
COM0
COM1
COM2
COM3
VL
XTAL
RST

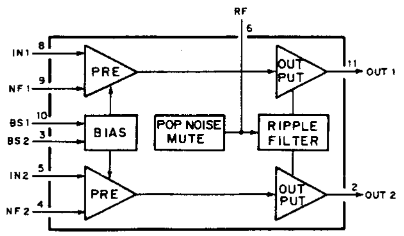


GP-1L52
GP-1L53

LA4550 (SANYO)
2CH AF POWER AMP
— TOP VIEW —


1 NC
2 OUT 2
3 BS 2
TAB
4 NF2
5 IN2
6 RF
7 GND (PRE)
8 IN1
9 NF1
GND (PWR)
10 BS1
11 OUT1
12 Vcc (+6 to +12V)

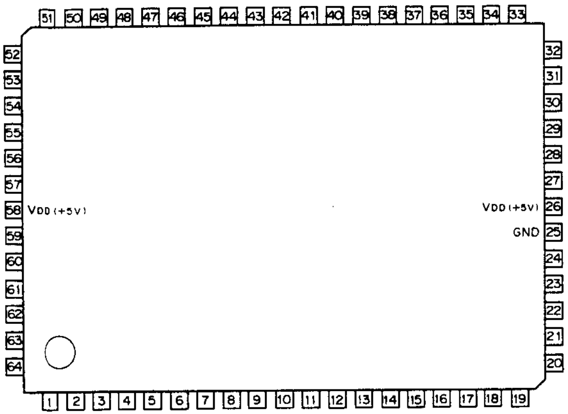
BS1,BS2 ; BOOTSTRAP CAPACITOR
IN1,IN2 ; INPUTS
NF1,NF2 ; NEGATIVE FEEDBACK CONTROL
OUT1,OUT2 ; OUTPUTS
RF ; RIPPLE FILTER


RF
IN1
NF1
BS1
BS2
IN2
NF2
PRE
BIAS
POP NOISE MUTE
RIPPLE FILTER
OUT PUT
PRE
OUT PUT
OUT 1
OUT 2

CXP5048H- ? ? ?Q (SONY) FLAT PACKAGE

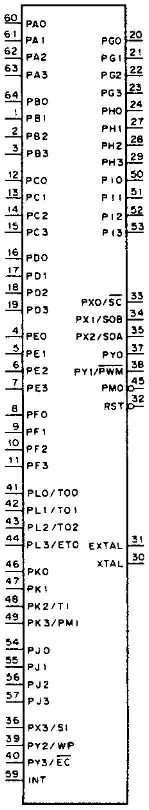
C-MOS 4-BIT MICROCOMPUTER

- TOP VIEW -

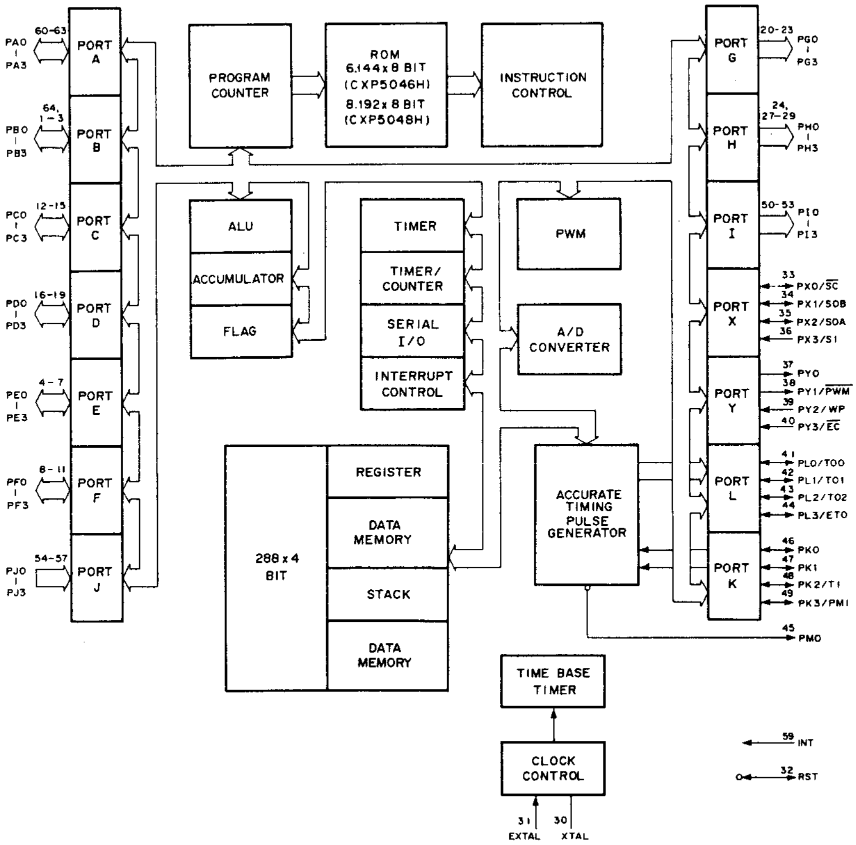

51
50
49
48
47
46
45
44
43
42
41
40
39
38
37
36
35
34
33
52
53
54
55
56
57
58
59
60
61
62
63
64
VDD (+5V)
32
31
30
29
28
27
26
25
24
23
22
21
20
VDD (+5V)
GND
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19

(V_{DD} = + 5V)

PIN NO.	I/O	SYMBOL	PIN NO.	I/O	SYMBOL	PIN NO.	I/O	SYMBOL	PIN NO.	I/O	SYMBOL
1	I/O	PB1	17	I/O	PD1	33	I/O	PX0/$\overline{SC}$	49	I/O	PK3/PMI
2	I/O	PB2	18	I/O	PD2	34	I/O	PX1/SOB	50	O	PI0
3	I/O	PB3	19	I/O	PD3	35	I/O	PX2/SOA	51	O	PI1
4	I/O	PE0	20	O	PG0	36	I	PX3/SI	52	O	PI2
5	I/O	PE1	21	O	PG1	37	O	PY0	53	O	PI3
6	I/O	PE2	22	O	PG2	38	O	PY1/$\overline{PWM}$	54	I	PJ0
7	I/O	PE3	23	O	PG3	39	I	PY2/WP	55	I	PJ1
8	I/O	PF0	24	O	PH0	40	I	PY3/$\overline{EC}$	56	I	PJ2
9	I/O	PF1	25	–	GND	41	I/O	PL0/TO0	57	I	PJ3
10	I/O	PF2	26	–	VDD	42	I/O	PL1/TO1	58	–	VDD
11	I/O	PF3	27	O	PH1	43	I/O	PL2/TO2	59	I	INT
12	I/O	PC0	28	O	PH2	44	I/O	PL3/ETO	60	I/O	PA0
13	I/O	PC1	29	O	PH3	45	O	PMO	61	I/O	PA1
14	I/O	PC2	30	O	XTAL	46	I/O	PK0	62	I/O	PA2
15	I/O	PC3	31	I	EXTAL	47	I/O	PK1	63	I/O	PA3
16	I/O	PD0	32	I/O	RST	48	I/O	PK2/TI	64	I/O	PB0


60 PA0
61 PA1
62 PA2
63 PA3
64 PB0
1 PB1
2 PB2
3 PB3
12 PC0
13 PC1
14 PC2
15 PC3
16 PD0
17 PD1
18 PD2
19 PD3
4 PE0
5 PE1
6 PE2
7 PE3
8 PF0
9 PF1
10 PF2
11 PF3
41 PL0/TO0
42 PL1/TO1
43 PL2/TO2
44 PL3/ETO
46 PK0
47 PK1
48 PK2/TI
49 PK3/PMI
54 PJ0
55 PJ1
56 PJ2
57 PJ3
36 PX3/SI
39 PY2/WP
40 PY3/EC
59 INT
PG0 20
PG1 21
PG2 22
PG3 23
PH0 24
PH1 27
PH2 28
PH3 29
PI0 50
PI1 51
PI2 52
PI3 53
PX0/SC 33
PX1/SOB 34
PX2/SOA 35
PY0 37
PY1/PWM 38
PMO 45
RST 32
EXTAL 31
XTAL 30

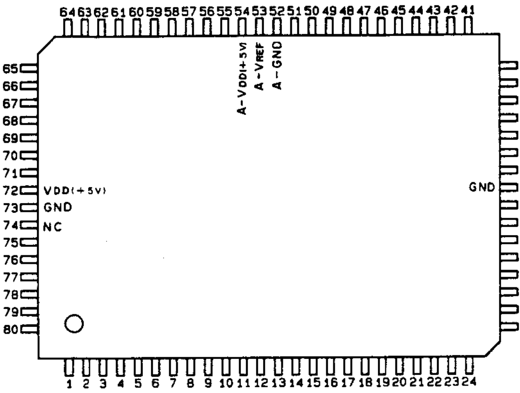
EC ; EVENT COUNT CLOCK INPUT
ETO ; EVENT COUNT OUTPUT
EXTAL ; EXTERNAL CLOCK INPUT/ OSCILLATOR CONNECTION TERMINAL
INT ; INTERRUPT INPUT
PMI ; PULSE MODE INPUT
PMO ; PULSE MODE OUTPUT
PWM ; PULSE WIDTH MODULATED
RST ; RESET INPUT
SC ; SERIAL TRANSMISSION CLOCK
SI ; SERIAL DATA INPUT
SOA,B ; SERIAL DATA OUTPUT A,B
TI ; TESTABLE DATA INPUT
TO0-2 ; TESTABLE DATA OUTPUT 0-2
WP ; WAKE UP INPUT
XTAL ; OSCILLATOR CONNECTION TERMINAL


PA0 I PA3
60-63
PORT A
PB0 I PB3
64, 1-3
PORT B
PC0 I PC3
12-15
PORT C
PD0 I PD3
16-19
PORT D
PE0 I PE3
4-7
PORT E
PF0 I PF3
8-11
PORT F
PJ0 I PJ3
54-57
PORT J
PROGRAM COUNTER
ROM 6.144x8 BIT (CXP5046H) 8.192x8 BIT (CXP5048H)
INSTRUCTION CONTROL
ALU
ACCUMULATOR
FLAG
TIMER
TIMER/ COUNTER
SERIAL I/O
INTERRUPT CONTROL
PWM
A/D CONVERTER
288x4 BIT
REGISTER
DATA MEMORY
STACK
DATA MEMORY
ACCURATE TIMING PULSE GENERATOR
TIME BASE TIMER
CLOCK CONTROL
31 EXTAL
30 XTAL
PORT G
20-23
PG0 I PG3
PORT H
24, 27-29
PH0 I PH3
PORT I
50-53
PI0 I PI3
PORT X
33 PX0/SC
34 PX1/SOB
35 PX2/SOA
36 PX3/SI
PORT Y
37 PY0
38 PY1/PWM
39 PY2/WP
40 PY3/EC
PORT L
41 PL0/TO0
42 PL1/TO1
43 PL2/TO2
44 PL3/ETO
PORT K
46 PK0
47 PK1
48 PK2/TI
49 PK3/PMI
45 PMO
59 INT
32 RST

CXP80116-Q (SONY) FLAT PACKAGE

C-MOS 8-BIT MICROCOMPUTER

– TOP VIEW –


64 63 62 61 60 59 58 57 56 55 54 53 52 51 50 49 48 47 46 45 44 43 42 41
A-VDD(+5V)
A-VREF
A-GND
65
66
67
68
69
70
71
72
73
74
75
76
77
78
79
80
VDD(+5V)
GND
NC
GND
40
39
38
37
36
35
34
33
32
31
30
29
28
27
26
25
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24

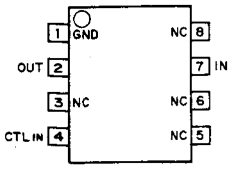
(V_{DD} = + 5V)

PIN NO.	I/O	SYMBOL	PIN NO.	I/O	SYMBOL
1	O	PA1/PPO1/A9	41	I	PF6/SI1
2	O	PA0/PPO0/A8	42	I/O	PF5/SO1
3	O	PB7/PPO15/A7	43	I,I/O	PF4/$\overline{\mathrm{SCK1}}$
4	O	PB6/PPO14/A6	44	I	PF3/AN7
5	O	PB5/PPO13/A5	45	I	PF2/AN6
6	O	PB4/PPO12/A4	46	I	PF1/AN5
7	O	PB3/PPO11/A3	47	I	PF0/AN4
8	O	PB2/PPO10/A2	48	I	AN3
9	O	PB1/PPO9/A1	49	I	AN2
10	O	PB0/PPO8/A0	50	I	AN1
11	I/O,O,I/O	PC7/RTO7/D7	51	I	AN0
12	I/O,O,I/O	PC6/RTO6/D6	52	–	A-GND
13	I/O,O,I/O	PC5/RTO5/D5	53	–	A-V_{REF}
14	I/O,O,I/O	PC4/RTO4/D4	54	–	A-V_{DD}
15	I/O,O,I/O	PC3/RTO3/D3	55	I	PG7/EXI1
16	I/O,O,I/O	PC2/PPO18/D2	56	I	PG6/EXI0
17	I/O,O,I/O	PC1/PPO17/D1	57	I	PG5/SYNC1
18	I/O,O,I/O	PC0/PPO16/D0	58	I	PG4/SYNC0
19	I/O,O	PD7/$\overline{\mathrm{HALT}}$	59	I	PG3/$\overline{\mathrm{PBCTL}}$
20	I/O,O	PD6/$\overline{\mathrm{BRQ}}$	60	I	PG2/DPG
21	I/O,O	PD5/$\overline{\mathrm{BAK}}$	61	I	PG1/DFG
22	I/O,O	PD4/$\overline{\mathrm{SYNC}}$	62	I	PG0/CFG
23	I/O,O	PD3/C	63	O	PE7/DAB1
24	I/O,O	PD2/$\overline{\mathrm{R}}$/$\overline{\mathrm{W}}$	64	O	PE6/DAB0
25	I/O,O	PD1/$\overline{\mathrm{WR}}$	65	O	PE5/DAA1
26	I/O,O	PD0/$\overline{\mathrm{RD}}$	66	O	PE4/DAA0
27	O	PH3	67	O	PE3/PWM1
28	O	PH2	68	O	PE2/PWM0
29	O	PH1	69	I	PE1/$\overline{\mathrm{EC}}$/$\overline{\mathrm{INT2}}$
30	O	PH0	70	I	PE0/$\overline{\mathrm{INT0}}$
31	I	MP	71	I	$\overline{\mathrm{NMI}}$
32	I/O	RST	72	–	V_{DD}
33	–	GND	73	–	GND
34	O	XTAL	74	–	NC
35	I	EXTAL	75	O	PA7/PPO7/A15
36	I	CS0	76	O	PA6/PPO6/A14
37	I	SI0	77	O	PA5/PPO5/A13
38	O	SO0	78	O	PA4/PPO4/A12
39	I/O	SCK0	79	O	PA3/PPO3/A11
40	I	PF7/$\overline{\mathrm{INT1}}$/$\overline{\mathrm{CS1}}$	80	O	PA2/PPO2/A10

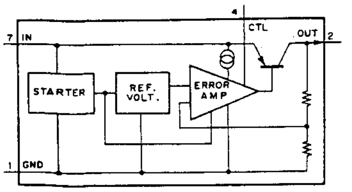
LA50 ? ?M (SANYO) FLAT PACKAGE

VOLTAGE REGULATOR

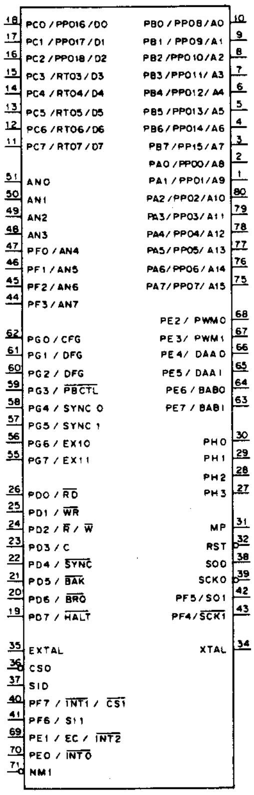
– TOP VIEW –


1 GND
NC 8
OUT 2
7 IN
3 NC
NC 6
CTL IN 4
NC 5

? ?	OUT PUT VOLTAGE
0 2	2 V
0 3	3 V
0 4	4 V
0 5	5 V
0 6	6 V
0 8	8 V
0 9	9 V
1 0	10V


4
CTL
7 IN
OUT 2
STARTER
REF. VOLT.
ERROR AMP
1 GND

CTL ; CONTROL


18 PC0 / PPO16 / D0
17 PC1 / PPO17 / D1
16 PC2 / PPO18 / D2
15 PC3 / RTO3 / D3
14 PC4 / RTO4 / D4
13 PC5 / RTO5 / D5
12 PC6 / RTO6 / D6
11 PC7 / RTO7 / D7
51 AN0
50 AN1
49 AN2
48 AN3
47 PF0 / AN4
46 PF1 / AN5
45 PF2 / AN6
44 PF3 / AN7
62 PG0 / CFG
61 PG1 / DFG
60 PG2 / DFG
59 PG3 / PBCTL
58 PG4 / SYNC 0
57 PG5 / SYNC 1
56 PG6 / EX10
55 PG7 / EX11
26 PD0 / RD
25 PD1 / WR
24 PD2 / R / W
23 PD3 / C
22 PD4 / SYNC
21 PD5 / BAK
20 PD6 / BRQ
19 PD7 / HALT
35 EXTAL
36 CS0
37 SID
40 PF7 / INT1 / CS1
41 PF6 / SI1
69 PE1 / EC / INT2
70 PE0 / INT0
71 NM1
PB0 / PPO8 / A0 10
PB1 / PPO9 / A1 9
PB2 / PPO10 / A2 8
PB3 / PPO11 / A3 7
PB4 / PPO12 / A4 6
PB5 / PPO13 / A5 5
PB6 / PPO14 / A6 4
PB7 / PP15 / A7 3
PA0 / PPO0 / A8 2
PA1 / PPO1 / A9 1
PA2 / PPO2 / A10 80
PA3 / PPO3 / A11 79
PA4 / PPO4 / A12 78
PA5 / PPO5 / A13 77
PA6 / PPO6 / A14 76
PA7 / PPO7 / A15 75
PE2 / PWM0 68
PE3 / PWM1 67
PE4 / DAA0 66
PE5 / DAA1 65
PE6 / BAB0 64
PE7 / BAB1 63
PH0 30
PH1 29
PH2 28
PH3 27
MP 31
RST 32
SO0 38
SCK0 39
PF5 / SO1 42
PF4 / SCK1 43
XTAL 34

INPUT
AN0 – AN7 : ANALOG INPUTS
BRQ : BUS REQUEST INPUT
CFG : CAPSTAN FG INPUT
CS0,1 : CHIP SELECT INPUTS
DFG : DRUM FG INPUT
DPG : DRUM PG INPUT
EC : EVENT INPUT
EXI0,1 : EXTERNAL INPUTS
EXTAL : SYSTEM CLOCK GENERATE JOINT
HALT : CPU STOP INPUT
INT0 – INT2 : EXTERNAL OFFERING INPUTS
MP : MICRO PROSESSOR MODE INPUT
NMI : NONMASKABLE OFFERING INPUT
PBCTL : PB CTL PULSE INPUT
PE0,1 : PORT E INPUTS
PF0 – PF7 : PORT F INPUTS
PG0 – PG7 : PORT G INPUTS
SI0,1 : SERIAL DATA INPUTS
SYNC0,1 : COMPOSITE SYNC INPUTS

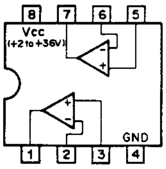
OUTPUT
A0 – A15 : ADDRESS BUS OUTPUTS
BAK : BUS ACKNOWLEGE OUTPUT
C : TIMING SIGNAL OUTPUT
DAA0,1 : DA GATE PULSE OUTPUTS
DAB0,1 : DA GATE PULSE OUTPUTS
PA0 – PA7 : PORT A OUTPUTS
PB0 – PB7 : PORT B OUTPUTS
PE2 – PE7 : PORT E OUTPUTS
PH0 – PH3 : PORT H OUTPUTS
PPO0 – PPO18 : PROGRAMMABLE PATTERN GENERATOR OUTPUTS
PWM0,1 : PWM OUTPUTS
R／W : CPU MACHINE SYCLE
RD : READ
RTO3 – RTO7 : REAL TIME PULSE OUTPUTS
SO0,1 : SERIAL DATA OUTPUTS
SYNC : SYNC
WR : WRITE
XTAL : SYSTEM CLOCK GENERATER OUTPUT

INPUT/OUTPUT
D0 – D7 : DATA BUS
PC0 – PC7 : PORT C
PD0 – PD7 : PORT D
RST : RESET
SCK0,1 : SERIAL CLOCK

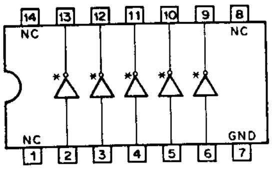
LM2903DQ (RAYTHEON)
LM2903M (RAYTHEON) FLAT PACKAGE
uPC393G2 (NEC) FLAT PACKAGE

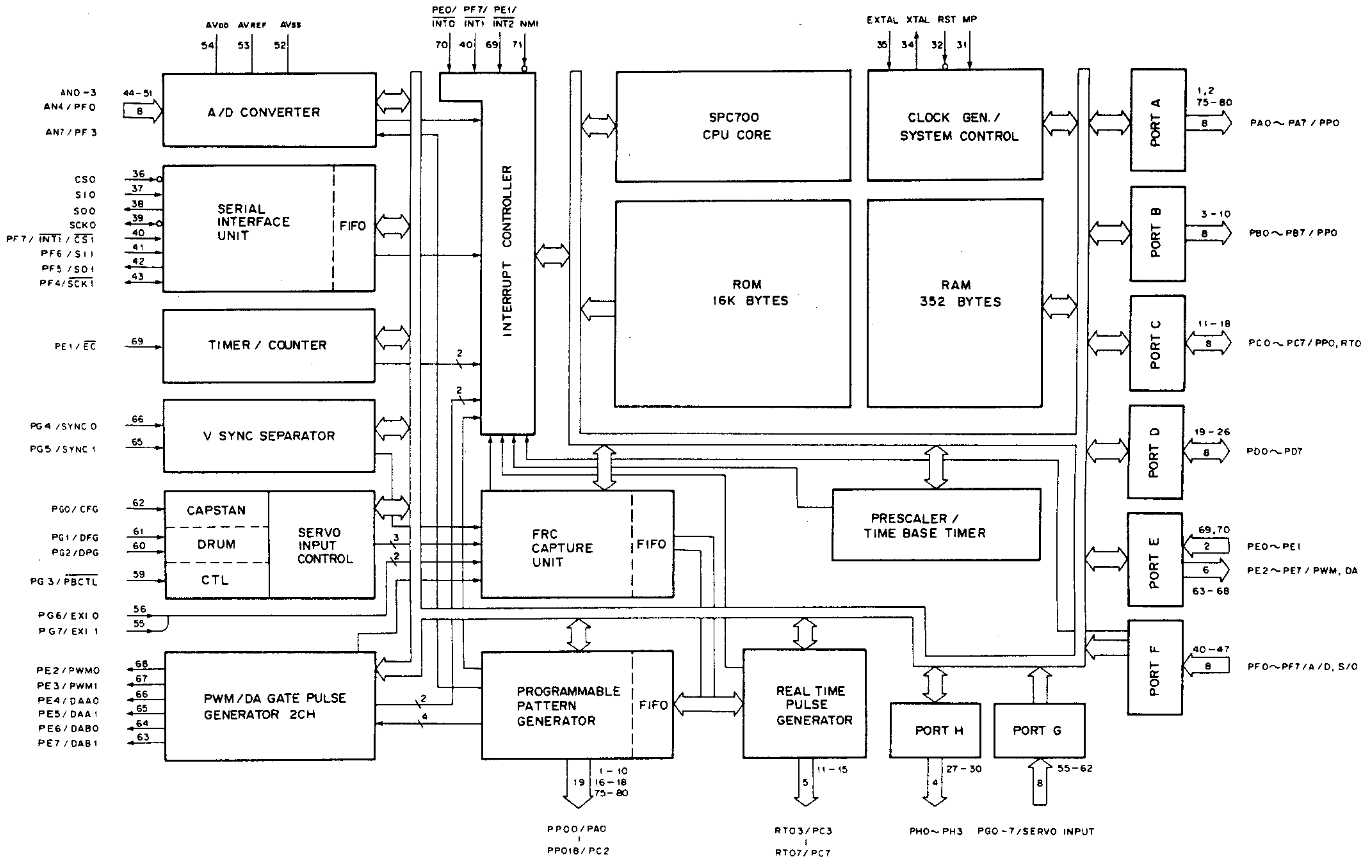
DUAL VOLTAGE COMPARATORS

– TOP VIEW –


8
7
6
5
Vcc
(+2 to +36V)
GND
1
2
3
4

M54516P (MITSUBISHI)
INVERTER WITH OPEN-COLLECTOR
(DARLINGTON-CONNECTED TRANSISTOR ARRAY)
— TOP VIEW —

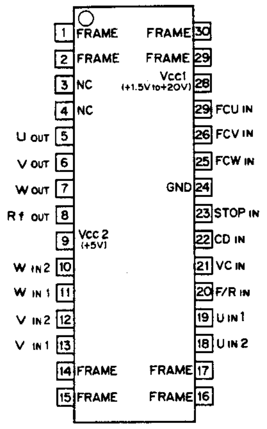

14
13
12
11
10
9
8
NC
NC
NC
GND
1
2
3
4
5
6
7

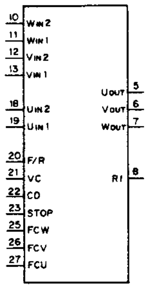

AVDD AVREF AVSS
54 53 52
PE0/INT0 PF7/INT1 PE1/INT2 NMI
70 40 69 71
EXTAL XTAL RST MP
35 34 32 31
AN0-3
AN4/PF0
AN7/PF3
44-51
8
A/D CONVERTER
CS0
SI0
SO0
SCK0
PF7/INT1/CS1
PF6/SI1
PF5/SO1
PF4/SCK1
36 37 38 39 40 41 42 43
SERIAL INTERFACE UNIT
FIFO
PE1/EC
69
TIMER / COUNTER
PG4/SYNC 0
PG5/SYNC 1
66 65
V SYNC SEPARATOR
PG0/CFG
PG1/DFG
PG2/DPG
PG3/PBCTL
62 61 60 59
CAPSTAN
DRUM
CTL
SERVO INPUT CONTROL
PG6/EXI 0
PG7/EXI 1
56 55
PE2/PWM0
PE3/PWM1
PE4/DAA0
PE5/DAA1
PE6/DAB0
PE7/DAB1
68 67 66 65 64 63
PWM/DA GATE PULSE GENERATOR 2CH
INTERRUPT CONTROLLER
SPC700 CPU CORE
CLOCK GEN./ SYSTEM CONTROL
ROM 16K BYTES
RAM 352 BYTES
FRC CAPTURE UNIT
FIFO
PRESCALER / TIME BASE TIMER
PROGRAMMABLE PATTERN GENERATOR
FIFO
REAL TIME PULSE GENERATOR
PORT H
PORT G
19
1-10
16-18
75-80
PP00/PA0
PP018/PC2
5
11-15
RT03/PC3
RT07/PC7
4
27-30
PH0~PH3
8
55-62
PG0-7/SERVO INPUT
PORT A
1,2
75-80
8
PA0~PA7/PP0
PORT B
3-10
8
PB0~PB7/PP0
PORT C
11-18
8
PC0~PC7/PP0, RT0
PORT D
19-26
8
PD0~PD7
PORT E
69,70
2
PE0~PE1
6
PE2~PE7/PWM, DA
63-68
PORT F
40-47
8
PF0~PF7/A/D, S/O
2
3

LB1616M (SANYO) FLAT PACKAGE

3DD MOTOR DRIVER

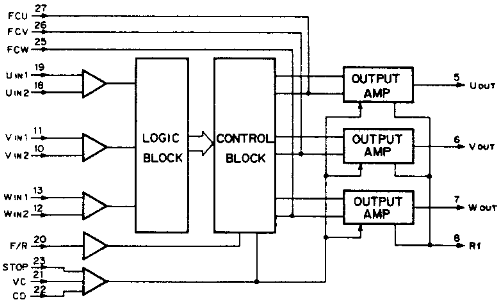
– TOP VIEW –


1 FRAME
2 FRAME
3 NC
4 NC
U OUT 5
V OUT 6
W OUT 7
Rf OUT 8
9 Vcc 2 (+5V)
W IN2 10
W IN1 11
V IN2 12
V IN1 13
14 FRAME
15 FRAME
FRAME 30
FRAME 29
Vcc1 (+1.5V to +20V) 28
29 FCU IN
26 FCV IN
25 FCW IN
GND 24
23 STOP IN
22 CD IN
21 VC IN
20 F/R IN
19 U IN1
18 U IN2
FRAME 17
FRAME 16

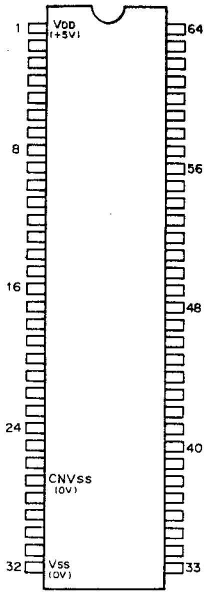

10 WIN2
11 WIN1
12 VIN2
13 VIN1
18 UIN2
19 UIN1
20 F/R
21 VC
22 CD
23 STOP
25 FCW
26 FCV
27 FCU
UOUT 5
VOUT 6
WOUT 7
Rf 8

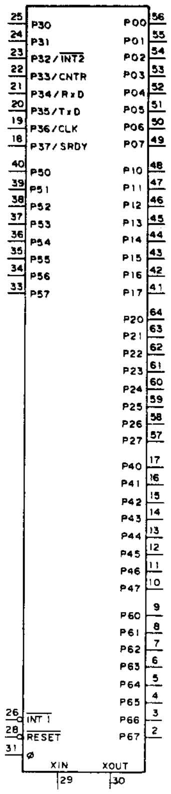
INPUT
CD : CURRENT DETECT
FCU,FCV,FCW : FREQUENCY RESPONSE
F/R : FWD/REW CONTROL
STOP : OVER CURRENT REFERENCE
U IN1,2 : U PHASE INPUTS
VC : SPEED/PHASE CONTROL
V IN1,2 : V PHASE INPUTS
W IN1,2 : W PHASE INPUTS

OUTPUT
Rf : OUTPUT CURRENT DETECT
U OUT : U PHASE OUTPUT
V OUT : V PHASE OUTPUT
W OUT : W PHASE OUTPUT


FCU 27
FCV 26
FCW 25
UIN1 19
UIN2 18
VIN1 11
VIN2 10
WIN1 13
WIN2 12
F/R 20
STOP 23
VC 21
CD 22
LOGIC BLOCK
CONTROL BLOCK
OUTPUT AMP
OUTPUT AMP
OUTPUT AMP
5 UOUT
6 VOUT
7 WOUT
8 Rf

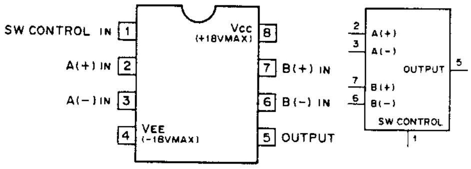
M50747H-XXXSP
C-MOS PROCESS 8-BIT ONE CHIP MICROCOMPUTER
— TOP VIEW —

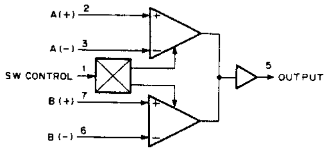

VDD (+5V)
CNVss (0V)
VSS (0V)
1
8
16
24
32
64
56
48
40
33


25 P30
24 P31
23 P32/INT2
22 P33/CNTR
21 P34/RxD
20 P35/TxD
19 P36/CLK
18 P37/SRDY
40 P50
39 P51
38 P52
37 P53
36 P54
35 P55
34 P56
33 P57
P00 56
P01 55
P02 54
P03 53
P04 52
P05 51
P06 50
P07 49
P10 48
P11 47
P12 46
P13 45
P14 44
P15 43
P16 42
P17 41
P20 64
P21 63
P22 62
P23 61
P24 60
P25 59
P26 58
P27 57
P40 17
P41 16
P42 15
P43 14
P44 13
P45 12
P46 11
P47 10
P60 9
P61 8
P62 7
P63 6
P64 5
P65 4
P66 3
P67 2
26 INT1
28 RESET
31 ø
XIN 29
XOUT 30

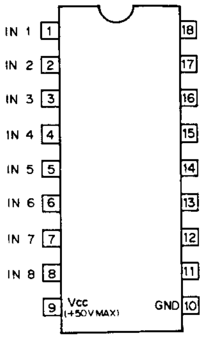
INT 1 ; INTERRUPT 1 IN
P00–P07 ;
P10–P17 ;
P20–P27 ; 8 BIT I/O PORT
P30–P37 ;
P40–P47 ;
P50–P57 ; 8 BIT IN PORT
P60–P67 ; 8 BIT OUT PORT
RESET ; RESET IN (⌐˥_)
X IN/OUT ; CLOCK IN/OUT
ø ; CLOCK TIMING OUT
P32/INT2 ; PORT/INTERRUP2 IN/OUT
P33/CNTR ; PORT/CONTROL IN/OUT
P34/RXD ; RECEIVED DATA
P35/TXD ; TRANCEMITTED DATA
P36/CLK ; PORT/CLOCK IN/OUT
P37/SRDY ; SERIAL IN READY

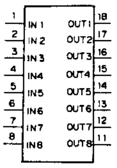
M5201FP (MITSUBISHI) FLAT PACKAGE
DUAL OPERATIONAL AMPLIFIER WITH SWITCHED OUTPUT
— TOP VIEW —

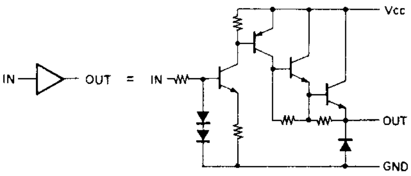

SW CONTROL IN 1
A(+) IN 2
A(−) IN 3
4 VEE (−18VMAX)
8 Vcc (+18VMAX)
7 B(+) IN
6 B(−) IN
5 OUTPUT
2 A(+)
3 A(−)
7 B(+)
6 B(−)
OUTPUT 5
SW CONTROL
1

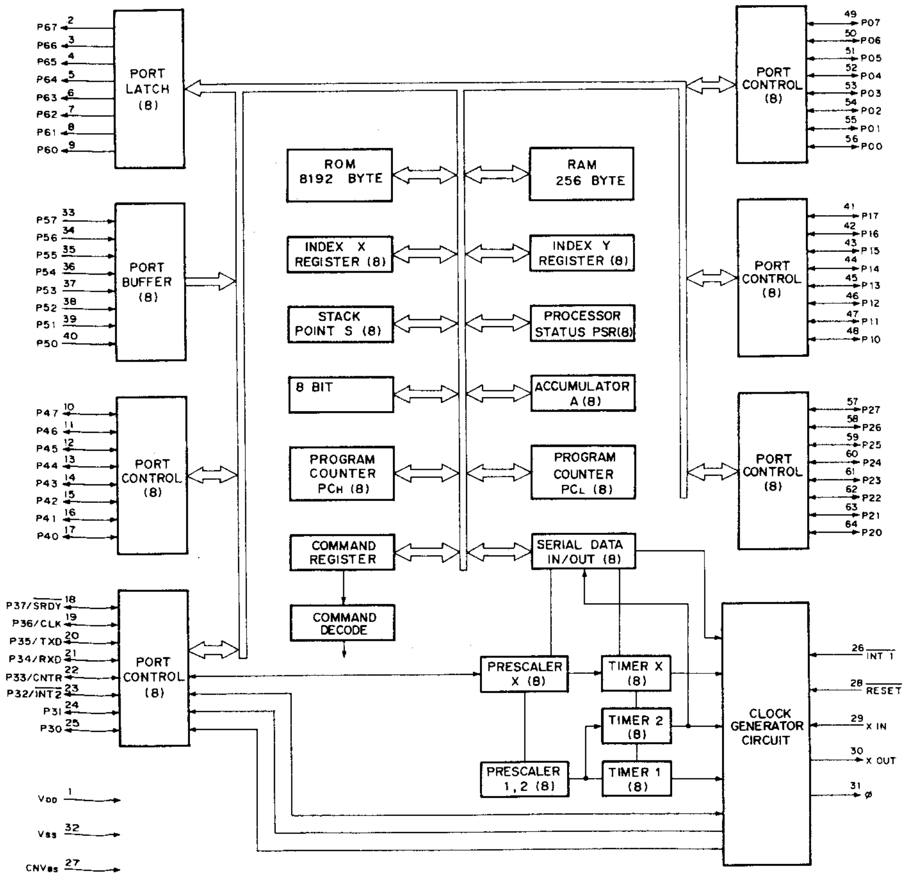

A(+) 2
A(−) 3
SW CONTROL 1
B(+) 7
B(−) 6
5 OUTPUT

M54562P (MITSUBISHI)
SOURCE TYPE DARLINGTON TRANSISTOR ARRAY
— TOP VIEW —

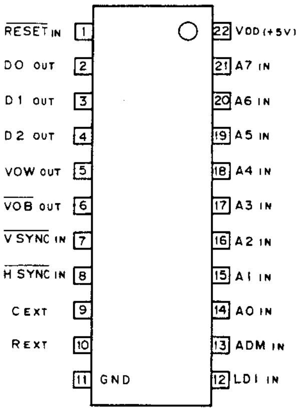

IN 1 1
IN 2 2
IN 3 3
IN 4 4
IN 5 5
IN 6 6
IN 7 7
IN 8 8
9 Vcc (+50VMAX)
18 OUT 1
17 OUT 2
16 OUT 3
15 OUT 4
14 OUT 5
13 OUT 6
12 OUT 7
11 OUT 8
GND 10

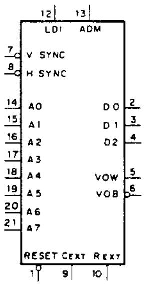

1 IN1 OUT1 18
2 IN2 OUT2 17
3 IN3 OUT3 16
4 IN4 OUT4 15
5 IN5 OUT5 14
6 IN6 OUT6 13
7 IN7 OUT7 12
8 IN8 OUT8 11

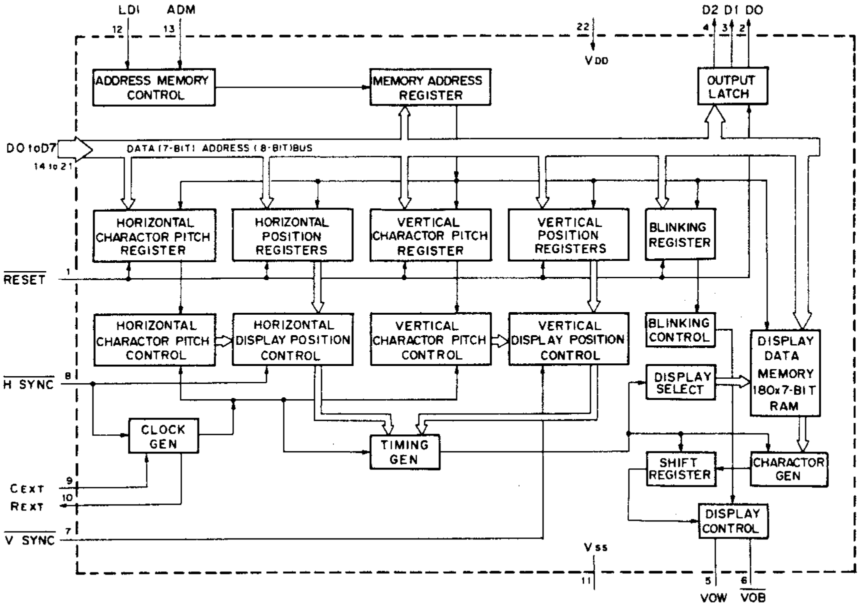

IN
OUT
=
IN
Vcc
OUT
GND

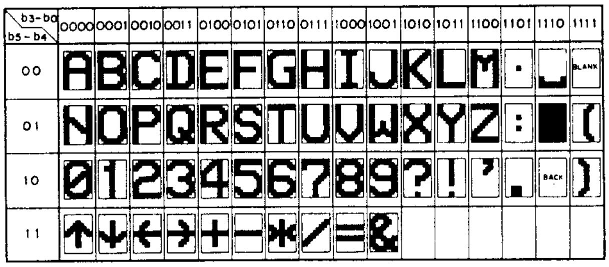

P67 2
P66 3
P65 4
P64 5
P63 6
P62 7
P61 8
P60 9
PORT LATCH (8)
P57 33
P56 34
P55 35
P54 36
P53 37
P52 38
P51 39
P50 40
PORT BUFFER (8)
P47 10
P46 11
P45 12
P44 13
P43 14
P42 15
P41 16
P40 17
PORT CONTROL (8)
P37/SRDY 18
P36/CLK 19
P35/TXD 20
P34/RXD 21
P33/CNTR 22
P32/INT2 23
P31 24
P30 25
PORT CONTROL (8)
VDD 1
VSS 32
CNVSS 27
ROM 8192 BYTE
RAM 256 BYTE
INDEX X REGISTER (8)
INDEX Y REGISTER (8)
STACK POINT S (8)
PROCESSOR STATUS PSR(8)
8 BIT
ACCUMULATOR A (8)
PROGRAM COUNTER PCH (8)
PROGRAM COUNTER PCL (8)
COMMAND REGISTER
SERIAL DATA IN/OUT (8)
COMMAND DECODE
PRESCALER X (8)
TIMER X (8)
TIMER 2 (8)
PRESCALER 1, 2 (8)
TIMER 1 (8)
CLOCK GENERATOR CIRCUIT
PORT CONTROL (8)
49 P07
50 P06
51 P05
52 P04
53 P03
54 P02
55 P01
56 P00
PORT CONTROL (8)
41 P17
42 P16
43 P15
44 P14
45 P13
46 P12
47 P11
48 P10
PORT CONTROL (8)
57 P27
58 P26
59 P25
60 P24
61 P23
62 P22
63 P21
64 P20
26 INT1
28 RESET
29 X IN
30 X OUT
31 ø

MB88303 (FUJITSU)
N-MOS PROGRAMMABLE TV DISPLAY CONTROLLER
— TOP VIEW —


RESET IN 1
D0 OUT 2
D1 OUT 3
D2 OUT 4
VOW OUT 5
VOB OUT 6
V SYNC IN 7
H SYNC IN 8
CEXT 9
REXT 10
11 GND
22 VDD (+5V)
21 A7 IN
20 A6 IN
19 A5 IN
18 A4 IN
17 A3 IN
16 A2 IN
15 A1 IN
14 A0 IN
13 ADM IN
12 LDI IN


LDI
ADM
V SYNC
H SYNC
A0
A1
A2
A3
A4
A5
A6
A7
D0
D1
D2
VOW
VOB
RESET
CEXT
REXT

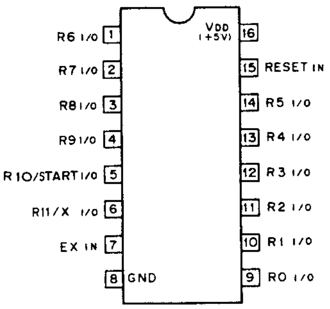

LDI
ADM
VDD
D2 D1 D0
ADDRESS MEMORY CONTROL
MEMORY ADDRESS REGISTER
OUTPUT LATCH
D0 to D7
14 to 21
DATA (7-BIT) ADDRESS (8-BIT) BUS
HORIZONTAL CHARACTOR PITCH REGISTER
HORIZONTAL POSITION REGISTERS
VERTICAL CHARACTOR PITCH REGISTER
VERTICAL POSITION REGISTERS
BLINKING REGISTER
RESET
HORIZONTAL CHARACTOR PITCH CONTROL
HORIZONTAL DISPLAY POSITION CONTROL
VERTICAL CHARACTOR PITCH CONTROL
VERTICAL DISPLAY POSITION CONTROL
BLINKING CONTROL
DISPLAY DATA MEMORY 180x7-BIT RAM
DISPLAY SELECT
H SYNC
CLOCK GEN
TIMING GEN
SHIFT REGISTER
CHARACTOR GEN
CEXT
REXT
DISPLAY CONTROL
V SYNC
VSS
VOW
VOB

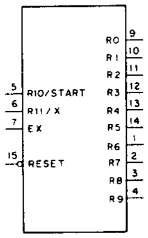


b3-b0 / b5-b4	0000	0001	0010	0011	0100	0101	0110	0111	1000	1001	1010	1011	1100	1101	1110	1111
00	A	B	C	D	E	F	G	H	I	J	K	L	M	·	␣	BLANK
01	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	:	█	(
10	0	1	2	3	4	5	6	7	8	9	?	!	’	.	BACK	)
11	↑	↓	←	→	+	—	*	/	=	&						

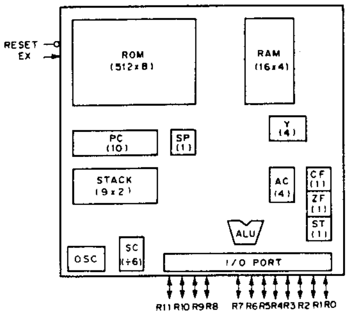
ADM	; ADDRESS INCREMENT MODE
A0 to A7	; ADDRESS INPUT
D0 to D2	; DATA OUTPUT
CEXT	; EXT CAPACITOR FOR OSC
LDI	; LOAD DATA AND INSTRUCTION
VOB	; VIDEO BLACK OUT
VOW	; VIDEO WHITE OUT
REXT	; EXT RESISTOR FOR OSC

MB88201H (FUJITSU)
C-MOS 4 BIT MICROCOMPUTER
— TOP VIEW —

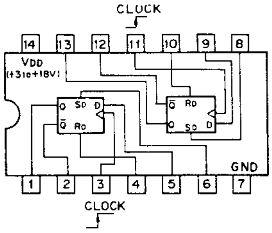

R6 I/O 1
R7 I/O 2
R8 I/O 3
R9 I/O 4
R10/START I/O 5
R11/X I/O 6
EX IN 7
8 GND
VDD (+5V) 16
15 RESET IN
14 R5 I/O
13 R4 I/O
12 R3 I/O
11 R2 I/O
10 R1 I/O
9 R0 I/O


R10/START
R11/X
EX
RESET
R0
R1
R2
R3
R4
R5
R6
R7
R8
R9

EX	; EXTERNAL X'TAL IN
R0-R11	; I/O PORT(R) IN/OUT
RESET	; RESET IN
START	; STANDBY RELEASE IN
R11/X	; EXT CLOCK IN/INT CLOCK OUT


RESET
EX
ROM (512x8)
RAM (16x4)
PC (10)
SP (1)
Y (4)
STACK (9x2)
AC (4)
CF (1)
ZF (1)
ST (1)
ALU
OSC
SC (÷6)
I/O PORT
R11 R10 R9 R8 R7 R6 R5 R4 R3 R2 R1 R0

MC14013BCP (MOTOROLA)
C-MOS D-TYPE FLIP-FLOP WITH DIRECT SET/RESET
— TOP VIEW —


CLOCK
VDD (+3 to +18V)
Q SD D
Q̄ RD
Q̄ RD
Q SD D
GND
CLOCK

DIRECT R-S FLIP FLOP

SD	RD	Q	$\overline{Q}$
0	0	Qn	$\overline{Qn}$
0	1	0	1
1	0	1	0
1	1	1	1

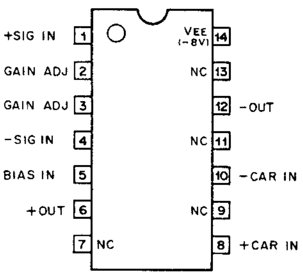
D-TYPE FLIP FLOP

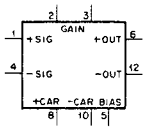
CKn	CKn+1
D	Q
0	0
1	1

0; LOW LEVEL
1; HIGH LEVEL

CLOCK CK; _⌐
CKn; BEFORE CLOCK
CKn+1; AFTER CLOCK

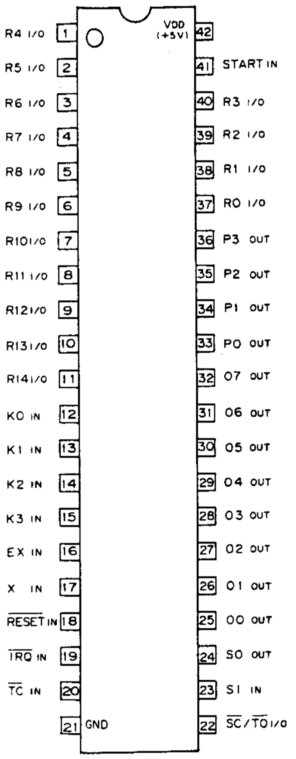
MC1496P (MOTOROLA)
BALANCED MODULATOR/DEMODULATOR
- TOP VIEW -

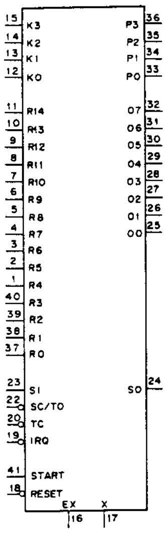

+SIG IN 1
GAIN ADJ 2
GAIN ADJ 3
-SIG IN 4
BIAS IN 5
+OUT 6
7 NC
VEE (-8V) 14
NC 13
12 -OUT
NC 11
10 -CAR IN
NC 9
8 +CAR IN


GAIN
+SIG
-SIG
+OUT
-OUT
+CAR
-CAR
BIAS

MB88505H (FUJITSU)

C-MOS 4-BIT ONE-CHIP MICROCOMPUTER
- TOP VIEW -

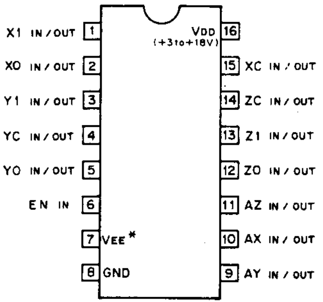

R4 I/O 1
R5 I/O 2
R6 I/O 3
R7 I/O 4
R8 I/O 5
R9 I/O 6
R10 I/O 7
R11 I/O 8
R12 I/O 9
R13 I/O 10
R14 I/O 11
K0 IN 12
K1 IN 13
K2 IN 14
K3 IN 15
EX IN 16
X IN 17
RESET IN 18
IRQ IN 19
TC IN 20
21 GND
VDD (+5V) 42
41 START IN
40 R3 I/O
39 R2 I/O
38 R1 I/O
37 R0 I/O
36 P3 OUT
35 P2 OUT
34 P1 OUT
33 P0 OUT
32 07 OUT
31 06 OUT
30 05 OUT
29 04 OUT
28 03 OUT
27 02 OUT
26 01 OUT
25 00 OUT
24 SO OUT
23 SI IN
22 SC/TO I/O


K3 K2 K1 K0
R14 R13 R12 R11 R10 R9 R8 R7 R6 R5 R4 R3 R2 R1 R0
SI SC/TO TC IRQ
START RESET
EX X
P3 P2 P1 P0
07 06 05 04 03 02 01 00
SO

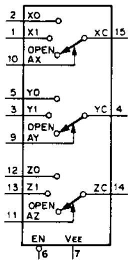
EX	; EXTERNAL CLOCK IN
IRQ	; INTERRUPT REQUEST IN
K0-K3	; 4-BIT PARALLEL IN
00-07	; 4-BIT PARALLEL OUT
P0-P3	; 4-BIT PARALLEL OUT
R0-R14	; DATA IN/OUT
RESET	; RESET IN
SC/TO	; SHIFT CLOCK IN/INT TIMING OUT
SI	; SERIAL DATA IN
SO	; SERIAL DATA OUT
START	; STANDBY OFF IN
TC	; EXTERNAL CLOCK IN FOR COUNTER
X	; CLOCK OUT

MC14053BCP (MOTOROLA)
MC14053BF (MOTOROLA) FLAT PACKAGE
TC4053BF (TOSHIBA) FLAT PACKAGE
TC4053BFHB (TOSHIBA) FLAT PACKAGE

C-MOS TRIPLE 2-CHANNEL ANALOG MULTIPLEXER/DEMULTIPLEXER
- TOP VIEW -

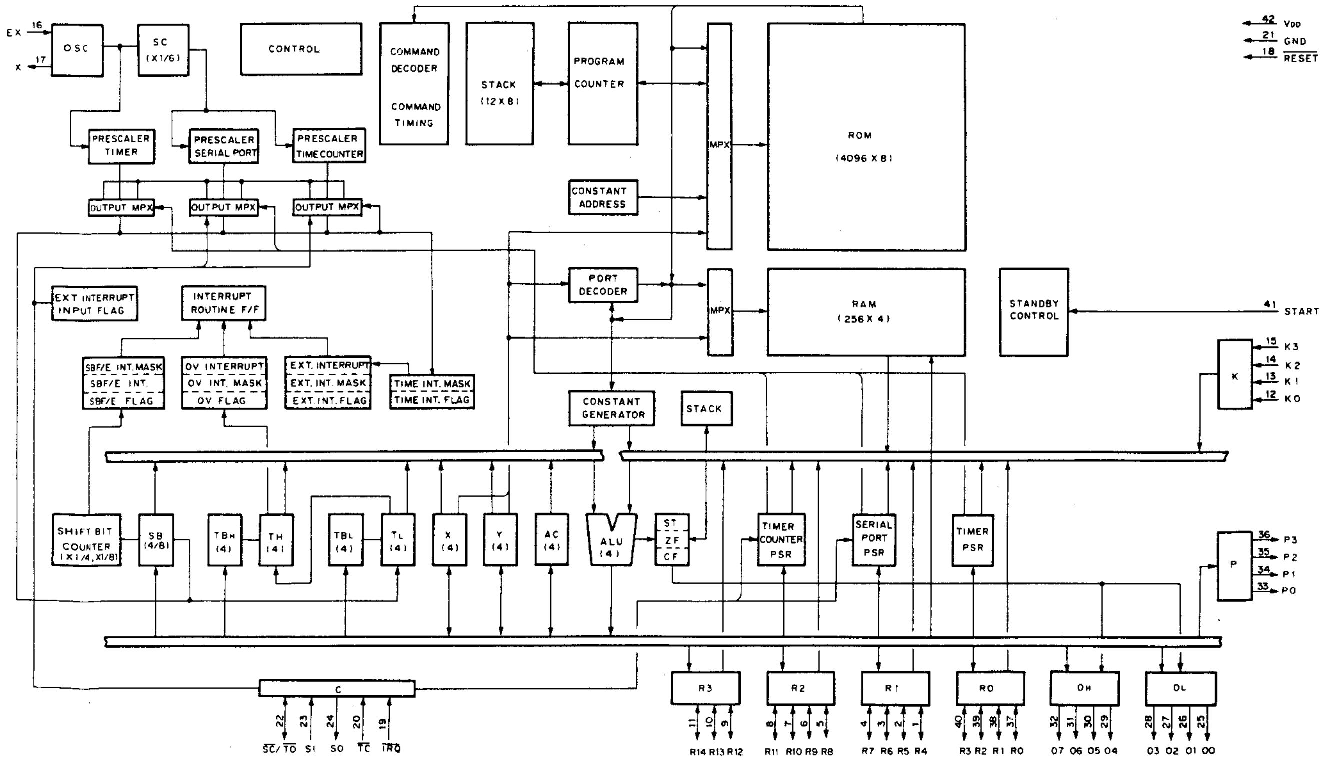

X1 IN/OUT 1
X0 IN/OUT 2
Y1 IN/OUT 3
YC IN/OUT 4
Y0 IN/OUT 5
EN IN 6
7 VEE*
8 GND
VDD (+3 to +18V) 16
15 XC IN/OUT
14 ZC IN/OUT
13 Z1 IN/OUT
12 Z0 IN/OUT
11 AZ IN/OUT
10 AX IN/OUT
9 AY IN/OUT

VEE*; VDD−VEE = +3 to +18 V

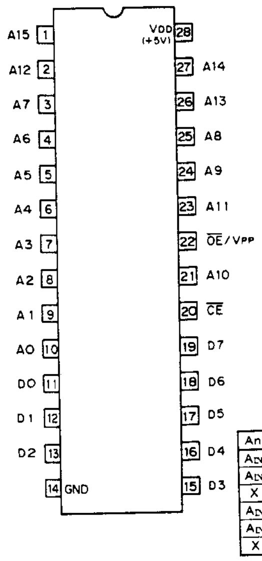

2 X0
1 X1
XC 15
10 AX
OPEN
5 Y0
3 Y1
YC 4
9 AY
OPEN
12 Z0
13 Z1
ZC 14
11 AZ
OPEN
EN VEE
6 7

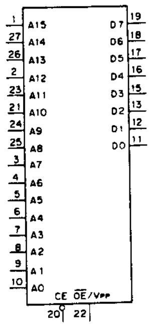
0; LOW LEVEL
1; HIGH LEVEL
X; DON'T CARE.

CONT. INPUTS		ON CHANNEL
EN	A (X,Y,Z,)	
0	0	0
0	1	1
1	X	OPEN


EX 16
X 17
OSC
SC (X1/6)
CONTROL
COMMAND DECODER
COMMAND TIMING
STACK (12 X 8)
PROGRAM COUNTER
MPX
ROM (4096 X 8)
PRESCALER TIMER
PRESCALER SERIAL PORT
PRESCALER TIME COUNTER
OUTPUT MPX
OUTPUT MPX
OUTPUT MPX
CONSTANT ADDRESS
PORT DECODER
MPX
RAM (256 X 4)
STANDBY CONTROL
41 START
42 VDD
21 GND
18 RESET
EXT INTERRUPT INPUT FLAG
INTERRUPT ROUTINE F/F
SBF/E INT. MASK
SBF/E INT.
SBF/E FLAG
OV INTERRUPT
OV INT. MASK
OV FLAG
EXT. INTERRUPT
EXT. INT. MASK
EXT. INT. FLAG
TIME INT. MASK
TIME INT. FLAG
CONSTANT GENERATOR
STACK
K
15 K3
14 K2
13 K1
12 K0
SHIFT BIT COUNTER (X1/4, X1/8)
SB (4/8)
TBH (4)
TH (4)
TBL (4)
TL (4)
X (4)
Y (4)
AC (4)
ALU (4)
ST
ZF
CF
TIMER COUNTER PSR
SERIAL PORT PSR
TIMER PSR
P
36 P3
35 P2
34 P1
33 P0
C
22 23 24 20 19
SC/TO SI SO TC IRQ
R3 R2 R1 R0 OH OL
11 10 9
R14 R13 R12
8 7 6 5
R11 R10 R9 R8
4 3 2 1
R7 R6 R5 R4
40 39 38 37
R3 R2 R1 R0
32 31 30 29
07 06 05 04
28 27 26 25
03 02 01 00

MBM27C512-25 (FUJITSU) (ACCESS TIME = 250nS)
C-MOS 512K (65,536x8 = 524,288)-BIT ERASABLE PROM
- TOP VIEW -

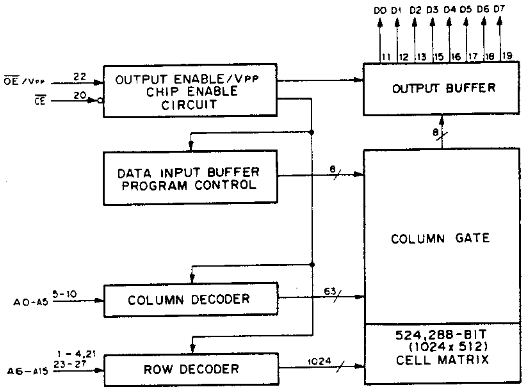

A15 1
A12 2
A7 3
A6 4
A5 5
A4 6
A3 7
A2 8
A1 9
A0 10
D0 11
D1 12
D2 13
14 GND
VDD (+5V) 28
27 A14
26 A13
25 A8
24 A9
23 A11
22 $\overline{OE}$/VPP
21 A10
20 $\overline{CE}$
19 D7
18 D6
17 D5
16 D4
15 D3


1 A15
27 A14
26 A13
2 A12
23 A11
21 A10
24 A9
25 A8
3 A7
4 A6
5 A5
6 A4
7 A3
8 A2
9 A1
10 A0
D7 19
D6 18
D5 17
D4 16
D3 15
D2 13
D1 12
D0 11
CE $\overline{OE}$/VPP
20 22

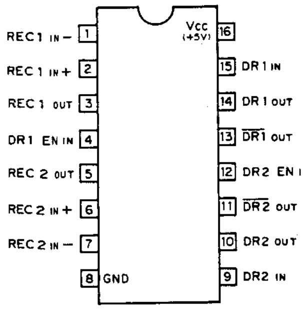
A0 – A15 : ADDRESS INPUTS
$\overline{CE}$: CHIP ENABLE INPUT
D0 – D7 : DATA OUTPUTS
$\overline{OE}$: OUTPUT ENABLE INPUT
V_{PP} : PROGRAM POWER SUPPLY

An	$\overline{CE}$	$\overline{OE}/V_{PP}$	V_{DD}	Dn	FUNCTION
A_{IN}	0	0	+5V	D_{OUT}	READ
A_{IN}	0	1	+5V	HI-Z	OUTPUT DISABLE
X	1	X	+5V	HI-Z	STANDBY
A_{IN}	0	+12.5V	+6V	D_{IN}	PGM
A_{IN}	0	0	+6V	D_{OUT}	PGM VERIFY
X	1	+12.5V	+6V	HI-Z	PGM INH

0 : LOW LEVEL
1 : HIGH LEVEL
X : DON'T CARE
HI-Z : HIGH IMPEDANCE


D0 D1 D2 D3 D4 D5 D6 D7
11 12 13 15 16 17 18 19
$\overline{OE}$/VPP 22
$\overline{CE}$ 20
OUTPUT ENABLE/VPP CHIP ENABLE CIRCUIT
OUTPUT BUFFER
8
DATA INPUT BUFFER PROGRAM CONTROL
8
COLUMN GATE
A0-A5 5-10
COLUMN DECODER
63
524,288-BIT (1024x512) CELL MATRIX
A6-A15 1-4,21 23-27
ROW DECODER
1024

MC34051P (MOTOROLA)
RS-422 DRIVER/RECEIVER
— TOP VIEW —

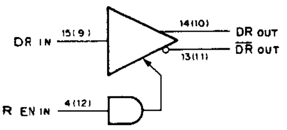

REC1 IN– 1
REC1 IN+ 2
REC1 OUT 3
DR1 EN IN 4
REC2 OUT 5
REC2 IN+ 6
REC2 IN– 7
8 GND
Vcc (+5V) 16
15 DR1 IN
14 DR1 OUT
13 $\overline{DR1}$ OUT
12 DR2 EN IN
11 $\overline{DR2}$ OUT
10 DR2 OUT
9 DR2 IN

DR EN	MODE
0	DISABLE
1	ENABLE

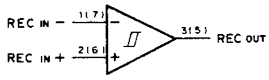
0 ; LOW LEVEL
1 ; HIGH LEVEL

DR ; DRIVER
DR EN ; DRIVER ENABLE
REC ; RECEIVER

DRIVER CIRCUIT

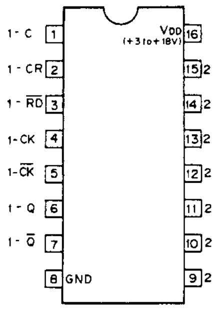

DR IN 15(9)
14(10) DR OUT
13(11) $\overline{DR}$ OUT
DR EN IN 4(12)

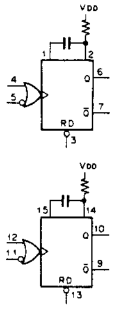
RECEIVER CIRCUIT


REC IN – 1(7)
REC IN + 2(6)
3(5) REC OUT

MC14538BCP (MOTOROLA)
TC4538BF (TOSHIBA) FLAT PACKAGE
TC4538BP (TOSHIBA)

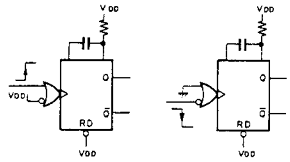
C-MOS DUAL RETRIGGERABLE/NON-RETRIGGERABLE
MONOSTABLE MULTIVIBRATOR
- TOP VIEW -


1-C 1
1-CR 2
1-$\overline{RD}$ 3
1-CK 4
1-$\overline{CK}$ 5
1-Q 6
1-$\overline{Q}$ 7
8 GND
VDD (+3 to +18V) 16
15 2-C
14 2-CR
13 2-$\overline{RD}$
12 2-CK
11 2-$\overline{CK}$
10 2-Q
9 2-$\overline{Q}$

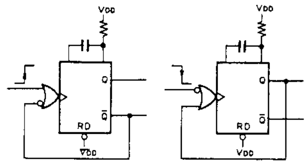

VDD
1 2
4 5
Q 6
$\overline{Q}$ 7
RD 3
VDD
15 14
12 11
Q 10
$\overline{Q}$ 9
RD 13

OUTPUT PULSE WIDTH=CR

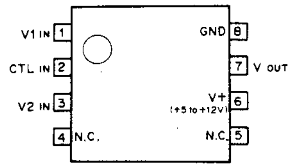
RETRIGGERABLE M.M.V

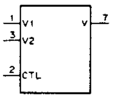

VDD
VDD
Q
$\overline{Q}$
RD
VDD
VDD
Q
$\overline{Q}$
RD
VDD

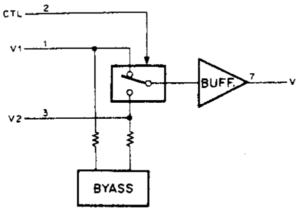
NON-RETRIGGERABLE M.M.V


VDD
Q
$\overline{Q}$
RD
VDD
VDD
Q
$\overline{Q}$
RD
VDD

NJM2233AM (JRC) FLAT PACKAGE
2-INPUT SIGNAL VIDEO SWITCH
- TOP VIEW -


V1 IN 1
CTL IN 2
V2 IN 3
4 N.C.
GND 8
7 V OUT
V+ (+5 to +12V) 6
N.C. 5

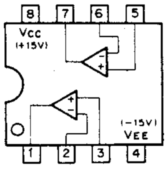

1 V1
3 V2
2 CTL
V 7


CTL 2
V1 1
V2 3
BUFF.
7 V
BYASS

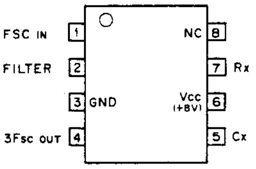
CTL	V
0	V1
1	V2

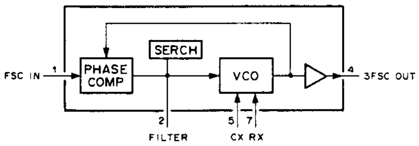
0 : LOW LEVEL
1 : HIGH LEVEL

NJM4558M (JRC) FLAT PACKAGE
OPERATIONAL AMPLIFIER
- TOP VIEW -

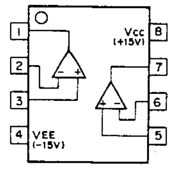

8 7 6 5
Vcc (+15V)
(-15V) VEE
1 2 3 4

NJM2238M (JRC) FLAT PACKAGE
3-TIMES OSCILLATOR
– TOP VIEW –

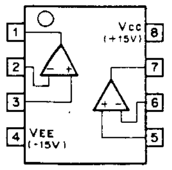

FSC IN 1
FILTER 2
3 GND
3Fsc OUT 4
NC 8
7 Rx
Vcc (+8V) 6
5 Cx


FSC IN
1
PHASE COMP
SERCH
VCO
4
3FSC OUT
2
FILTER
5 7
CX RX

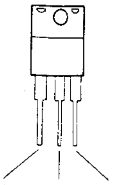
NJM4562D (JRC)
NJM4562M (JRC) FLAT PACKAGE
OPERATIONAL AMPLIFIER
– TOP VIEW –


1
2
3
4
VEE (-15V)
Vcc (+15V)
8
7
6
5

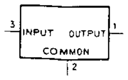
RC4560DD (RAYTHEON)
OPERATIONAL AMPLIFIER
– TOP VIEW –


1
2
3
4
VEE (-15V)
Vcc (+15V)
8
7
6
5

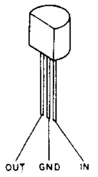
RC78M ? ?FA (RAYTHEON)
RC78 ? ?FA (RAYTHEON)
POSITIVE VOLTAGE REGULATOR
– FRONT VIEW –


INPUT (3)
COMMON (2)
OUTPUT (1)

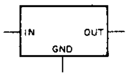
OUTPUT VOLTAGE	RC78M??FA	RC78??FA
+5V	RC78M05FA	RC7805FA
+6V	RC78M06FA	RC7806FA
+8V	----------	RC7808FA
+9V	RC78M09FA	RC7809FA
+12V	RC78M12FA	RC7812FA
+15V	RC78M15FA	RC7815FA
+18V	----------	RC7818FA
+20V	----------	RC7820FA
+24V	----------	RC7824FA


3
INPUT
OUTPUT
1
COMMON
2

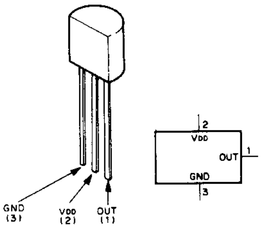
RC78L ? ?A (RAYTHEON)
POSITIVE VOLTAGE REGULATOR (100mA)



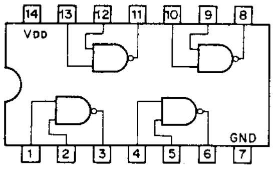
OUTPUT VOLTAGE	RC78L??A
+2.6V	RC78L02A
+4V	---------
+5V	RC78L05A
+6V	RC78L06A
+6.2V	---------
+7V	---------
+8V	RC78L08A
+8.2V	---------
+9V	RC78L09A
+10V	---------
+12V	RC78L12A
+15V	RC78L15A
+18V	RC78L18A
+20V	RC78L20A
+24V	RC78L24A

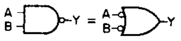


S-8054ALB (SEIKO)
C-MOS VOLTAGE DETECTOR


GND (3)
VDD (2)
OUT (1)
2
VDD
OUT
1
GND
3

SN74HCOONS (TI) (V_{DD} = + 2 to + 6V) FLAT PACKAGE
C-MOS QUAD 2-INPUT NAND GATE
– TOP VIEW –


14
13
12
11
10
9
8
VDD
GND
1
2
3
4
5
6
7

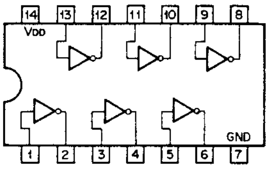


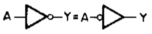
Y = $\overline{A \cdot B} = \overline{A} + \overline{B}$

A	B	Y
0	0	1
0	1	1
1	0	1
1	1	0

0; LOW LEVEL
1; HIGH LEVEL

SN74HC04N (TI) (V_{DD} = + 2 to + 6V)
TC74HC04F (TOSHIBA) (V_{DD} = + 2 to + 6V) FLAT PACKAGE
C-MOS HEX INVERTER
– TOP VIEW –


14
13
12
11
10
9
8
VDD
GND
1
2
3
4
5
6
7

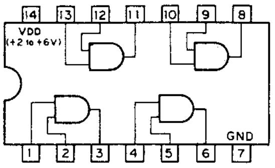


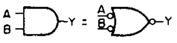
Y = $\overline{A}$

A	Y
0	1
1	0

0: LOW LEVEL
1: HIGH LEVEL

SN74HC08N (TI)
C-MOS QUAD 2-INPUT AND GATE
– TOP VIEW –


14
13
12
11
10
9
8
VDD (+2 to +6V)
GND
1
2
3
4
5
6
7

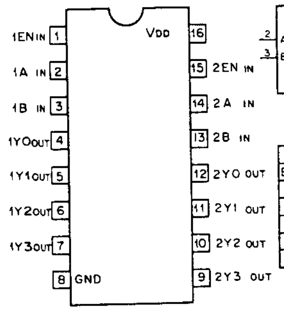


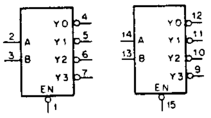
Y = A · B = $\overline{\overline{A} + \overline{B}}$

A	B	Y
0	0	0
0	1	0
1	0	0
1	1	1

0; LOW LEVEL
1; HIGH LEVEL

SN74HC139N (TI) (V_{DD} = + 2 to + 6V)
C-MOS 1-OF-4 DECODER/DEMULTIPLEXER
– TOP VIEW –

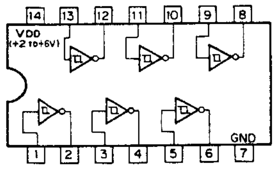

1ENIN 1
1A IN 2
1B IN 3
1Y0OUT 4
1Y1OUT 5
1Y2OUT 6
1Y3OUT 7
8 GND
VDD 16
15 2EN IN
14 2A IN
13 2B IN
12 2Y0 OUT
11 2Y1 OUT
10 2Y2 OUT
9 2Y3 OUT

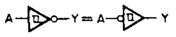

A
B
Y0
Y1
Y2
Y3
EN
2
3
4
5
6
7
1
14
13
12
11
10
9
15

INPUTS			OUTPUTS			
EN	B	A	Y3	Y2	Y1	Y0
0	0	0	1	1	1	0
0	0	1	1	1	0	1
0	1	0	1	0	1	1
0	1	1	0	1	1	1
1	X	X	1	1	1	1

0 ; LOW LEVEL
1 ; HIGH LEVEL
X ; DON'T CARE

SN74HC14N (TI)
SN74HC14NS (TI) FLAT PACKAGE
C-MOS SCHMITT TRIGGER INVERTER
– TOP VIEW –

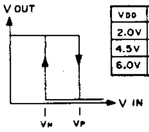

14
13
12
11
10
9
8
VDD
(+2 to+6V)
GND
1
2
3
4
5
6
7



$Y = \overline{A}$

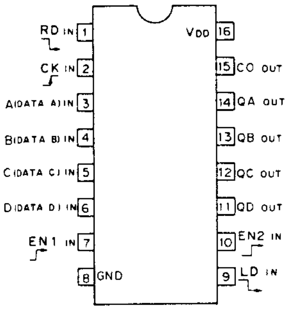
A	Y
0	1
1	0

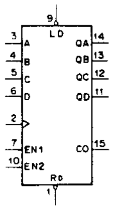
0 ;LOW LEVEL
1 ;HIGH LEVEL



VDD	VN	VP
2.0V	0.75V	1.25V
4.5V	1.9V	2.7V
6.0V	2.6V	3.6V

SN74HC163NS (TI) (V_{DD} = + 2 to + 6V) FLAT PACKAGE
C-MOS PRESETTABLE SYNCHRONOUS 4-BIT BINARY COUNTER
– TOP VIEW –

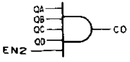

RD IN 1
CK IN 2
A(DATA A) IN 3
B(DATA B) IN 4
C(DATA C) IN 5
D(DATA D) IN 6
EN1 IN 7
8 GND
VDD 16
15 CO OUT
14 QA OUT
13 QB OUT
12 QC OUT
11 QD OUT
10 EN2 IN
9 LD IN


9
LD
3 A
4 B
5 C
6 D
2
7 EN1
10 EN2
RD
1
QA 14
QB 13
QC 12
QD 11
CO 15

MODE SELECTION

CONTROL INPUTS				MODE
RD	LD	EN1	EN2	
0	X	X	X	RESET (SYNCHRONOUS)
1	0	X	X	PRESET (SYNCHRONOUS)
1	1	0	X	NO COUNT
1	1	X	0	NO COUNT
1	1	1	1	COUNT

CARRY OUTPUT "CO"

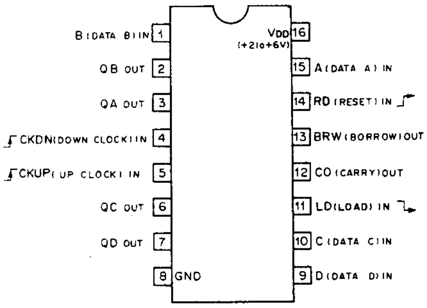

QA
QB
QC
QD
EN2
CO

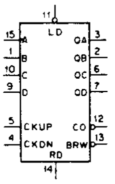
CO IS HIGH WHEN EN2 INPUT IS HIGH AND COUNT IS "15".

COUNT SEQUENCE

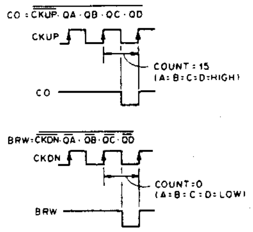
COUNT	OUTPUTS			
	QD	QC	QB	QA
0	0	0	0	0
1	0	0	0	1
2	0	0	1	0
3	0	0	1	1
4	0	1	0	0
5	0	1	0	1
6	0	1	1	0
7	0	1	1	1
8	1	0	0	0
9	1	0	0	1
10	1	0	1	0
11	1	0	1	1
12	1	1	0	0
13	1	1	0	1
14	1	1	1	0
15	1	1	1	1

SN74HC193N (TI)
C-MOS PRESETTABLE SYNCHRONOUS 4-BIT UP/DOWN COUNTER
– TOP VIEW –


B (DATA B) IN 1
QB OUT 2
QA OUT 3
CKDN(DOWN CLOCK) IN 4
CKUP(UP CLOCK) IN 5
QC OUT 6
QD OUT 7
8 GND
VDD (+2 to+6V) 16
15 A (DATA A) IN
14 RD (RESET) IN
13 BRW (BORROW) OUT
12 CO (CARRY) OUT
11 LD(LOAD) IN
10 C (DATA C) IN
9 D (DATA D) IN


11
LD
15 A
1 B
10 C
9 D
5 CKUP
4 CKDN
RD
14
QA 3
QB 2
QC 6
QD 7
CO 12
BRW 13

CONTROL INPUT				MODE
RD	LD	CKUP	CKDN	
1	X	X	X	RESET TO ZERO
0	0	X	X	PRESET
0	1	↑	1	UP COUNT
0	1	1	↑	DOWN COUNT
0	1	1	1	NO COUNT

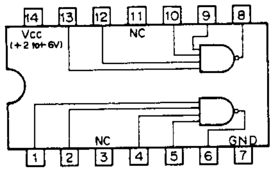

CO = CKUP · QA · QB · QC · QD
CKUP
COUNT : 15
(A : B : C : D : HIGH)
CO
BRW = CKDN · QA · QB · QC · QD
CKDN
COUNT : 0
(A : B : C : D : LOW)
BRW

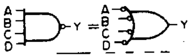
COUNT	OUTPUT			
	QD	QC	QB	QA
0	0	0	0	0
1	0	0	0	1
2	0	0	1	0
3	0	0	1	1
4	0	1	0	0
5	0	1	0	1
6	0	1	1	0
7	0	1	1	1
8	1	0	0	0
9	1	0	0	1
10	1	0	1	0
11	1	0	1	1
12	1	1	0	0
13	1	1	0	1
14	1	1	1	0
15	1	1	1	1

UP COUNT
DOWN COUNT

0 ; LOW LEVEL
1 ; HIGH LEVEL
X ; DON'T CARE

SN74HC20N (TI)
C-MOS 4-INPUT POSITIVE-NAND GATE
– TOP VIEW –


14
13
12
11
10
9
8
VCC
(+2 to+6V)
NC
NC
GND
1
2
3
4
5
6
7

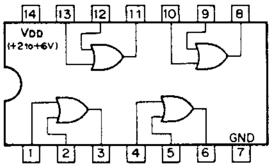

A
B
C
D
Y =
A
B
C
D
Y

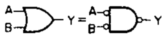
$Y = \overline{A \cdot B \cdot C \cdot D} = \overline{A} + \overline{B} + \overline{C} + \overline{D}$

A	B	C	D	Y
0	0	0	0	1
0	0	0	1	1
0	0	1	0	1
0	0	1	1	1
0	1	0	0	1
⋮	⋮	⋮	⋮	⋮
1	1	0	1	1
1	1	1	0	1
1	1	1	1	0

0 ; LOW LEVEL
1 ; HIGH LEVEL

SN74HC32N (TI)
C-MOS 2-INPUT OR GATE
– TOP VIEW –


14
13
12
11
10
9
8
VDD
(+2 to+6V)
GND
1
2
3
4
5
6
7

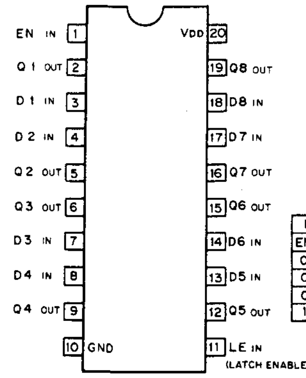


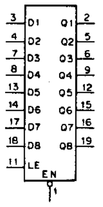
$Y = A + B = \overline{\overline{A} \cdot \overline{B}}$

A	B	Y
0	0	0
0	1	1
1	0	1
1	1	1

0 : LOW LEVEL
1 : HIGH LEVEL

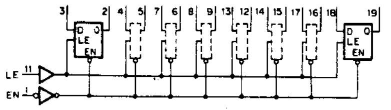
SN74HC373N (TI) (V_{DD} = +2 to +6V)
C-MOS 3-STATE OUTPUTS OCTAL LATCHES
– TOP VIEW –


EN IN 1
Q 1 OUT 2
D 1 IN 3
D 2 IN 4
Q 2 OUT 5
Q 3 OUT 6
D 3 IN 7
D 4 IN 8
Q 4 OUT 9
10 GND
20 VDD
19 Q8 OUT
18 D8 IN
17 D7 IN
16 Q7 OUT
15 Q6 OUT
14 D6 IN
13 D5 IN
12 Q5 OUT
11 LE IN
(LATCH ENABLE)

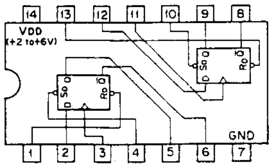

3 D1 Q1 2
4 D2 Q2 5
7 D3 Q3 6
8 D4 Q4 9
13 D5 Q5 12
14 D6 Q6 15
17 D7 Q7 16
18 D8 Q8 19
11 LE
EN
1

INPUTS			OUT
EN	D	LE	Q
0	1	1	1
0	0	1	0
0	X	0	Qo
1	X	X	HI-Z

HI-Z;
HIGH IMPEDANCE
0 ; LOW LEVEL
1 , HIGH LEVEL
X ; DON'T CARE


3
2
4
5
7
6
8
9
13
12
14
15
17
16
18
19
D Q
LE
EN
LE 11
EN 1

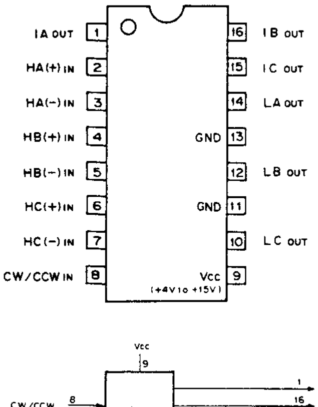
SN74HC74N (TI)
SN74HC74NS (TI) FLAT PACKAGE
C-MOS D-TYPE FLIP FLOP WITH DIRECT SET/RESET
– TOP VIEW –

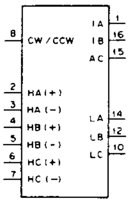

14
13
12
11
10
9
8
VDD
(+2 to+6V)
GND
1
2
3
4
5
6
7

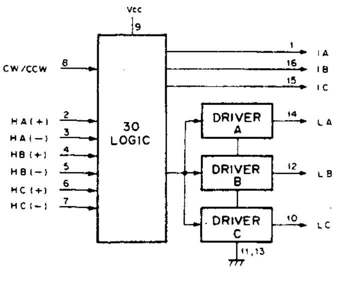
INPUTS				OUTPUTS	
$\overline{S_D}$	$\overline{R_D}$	CK	D	Qn+1	$\overline{Qn+1}$
0	1	X	X	1	0
1	0	X	X	0	1
0	0	X	X	1	1
1	1	↑	1	1	0
1	1	↑	0	0	1
1	1	0	X	Qn	$\overline{Qn}$

0; LOW LEVEL
1; HIGH LEVEL
X; DON'T CARE

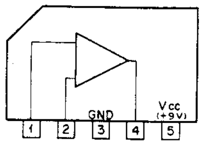
TA7745F (TOSHIBA) FLAT PACKAGE
DC MOTOR DRIVER
– TOP VIEW –


IA OUT 1
HA(+) IN 2
HA(–) IN 3
HB(+) IN 4
HB(–) IN 5
HC(+) IN 6
HC(–) IN 7
CW/CCW IN 8
16 IB OUT
15 IC OUT
14 LA OUT
GND 13
12 LB OUT
GND 11
10 LC OUT
Vcc 9
(+4V to +15V)

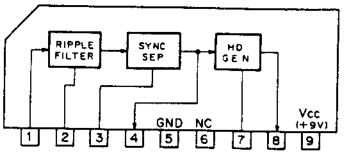

8 CW/CCW
IA 1
IB 16
AC 15
2 HA(+)
3 HA(–)
4 HB(+)
5 HB(–)
6 HC(+)
7 HC(–)
LA 14
LB 12
LC 10


Vcc
9
CW/CCW 8
HA(+) 2
HA(–) 3
HB(+) 4
HB(–) 5
HC(+) 6
HC(–) 7
30 LOGIC
DRIVER A
DRIVER B
DRIVER C
1 IA
16 IB
15 IC
14 LA
12 LB
10 LC
11,13

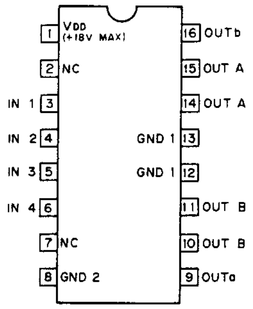
TA7060AP (TOSHIBA)
LINEAR AMP
— SIDE VIEW —

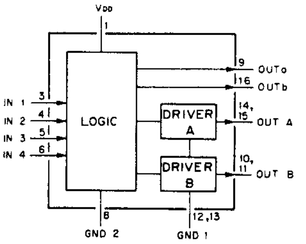

GND
Vcc
(+9V)
1
2
3
4
5

TA7357AP (TOSHIBA)
SYNC SEPARATOR/HD PULSE GENERATOR
— SIDE VIEW —


RIPPLE FILTER
SYNC SEP
HD GEN
GND
NC
Vcc
(+9V)
1
2
3
4
5
6
7
8
9

TA7733F (TOSHIBA) FLAT PACKAGE
FUNCTIONABLE BRIDGE DRIVER
– TOP VIEW –

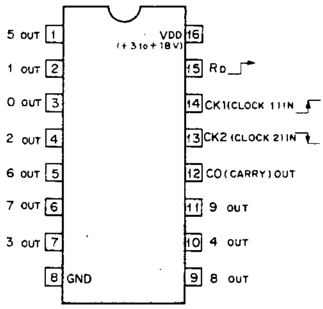

1 VDD
(+18V MAX)
2 NC
IN 1 3
IN 2 4
IN 3 5
IN 4 6
7 NC
8 GND 2
16 OUTb
15 OUT A
14 OUT A
GND 1 13
GND 1 12
11 OUT B
10 OUT B
9 OUTa

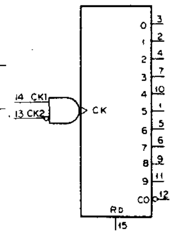

VDD
1
IN 1 3
IN 2 4
IN 3 5
IN 4 6
LOGIC
DRIVER A
DRIVER B
9 OUTa
16 OUTb
14, 15 OUT A
10, 11 OUT B
8 GND 2
12,13 GND 1

CONTROL	INPUTS				OUTPUTS				MODE
	IN1	IN2	IN3	IN4	OUTA	OUTB	OUTa	OUTb	
2-INPUT CONTROL	1	0	1	1	ON	–	ON	–	FWD
	0	1	1	1	–	ON	–	ON	REV
	1	1	1	1	ON	ON	–	–	BRAKE
	0	0	1	1	–	–	–	–	STOP
1-INPUT CONTROL	1	0	0	1	ON	–	ON	–	A ON
	0	0	0	1	–	ON	–	ON	B ON
	X	1	0	1	ON	ON	–	–	AB ON
				0	–	–	–	–	INHIBIT

0 : LOW LEVEL
1 : HIGH LEVEL
X : DON'T CARE

TC4017BP (TOSHIBA)
C-MOS DECADE COUNTER/DIVIDER
— TOP VIEW —


5 OUT 1
1 OUT 2
0 OUT 3
2 OUT 4
6 OUT 5
7 OUT 6
3 OUT 7
8 GND
VDD 16
(+3 to+18V)
15 RD
14 CK1 (CLOCK 1) IN
13 CK2 (CLOCK 2) IN
12 CO (CARRY) OUT
11 9 OUT
10 4 OUT
9 8 OUT


14 CK1
13 CK2
CK
0 3
1 2
2 4
3 7
4 10
5 1
6 5
7 6
8 9
9 11
CO 12
RD
15

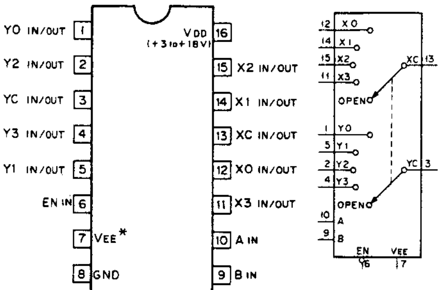
COUNT	INPUTS		OUTPUTS										
	RD	CK=CK1·$\overline{CK2}$	9	8	7	6	5	4	3	2	1	0	CO
0	1	X	0	0	0	0	0	0	0	0	0	1	1
0	0	↑	0	0	0	0	0	0	0	0	0	1	1
1	0	↑	0	0	0	0	0	0	0	0	1	0	1
2	0	↑	0	0	0	0	0	0	0	1	0	0	1
3	0	↑	0	0	0	0	0	0	1	0	0	0	1
4	0	↑	0	0	0	0	0	1	0	0	0	0	1
5	0	↑	0	0	0	0	1	0	0	0	0	0	0
6	0	↑	0	0	0	1	0	0	0	0	0	0	0
7	0	↑	0	0	1	0	0	0	0	0	0	0	0
8	0	↑	0	1	0	0	0	0	0	0	0	0	0
9	0	↑	1	0	0	0	0	0	0	0	0	0	0
NO COUNT	0	1	NO CHANGE										
	0	0											

0 ; LOW LEVEL
1 ; HIGH LEVEL
X ; DON'T CARE

TC4052BFHB (TOSHIBA) FLAT PACKAGE

C-MOS DUAL 4-CHANNEL ANALOG MULTIPLEXER/DEMULTIPLEXER

– TOP VIEW –


Y0 IN/OUT 1
Y2 IN/OUT 2
YC IN/OUT 3
Y3 IN/OUT 4
Y1 IN/OUT 5
EN IN 6
7 VEE*
8 GND
VDD (+3 to +18V) 16
15 X2 IN/OUT
14 X1 IN/OUT
13 XC IN/OUT
12 X0 IN/OUT
11 X3 IN/OUT
10 A IN
9 B IN
X0
X1
X2
X3
XC
OPEN
Y0
Y1
Y2
Y3
YC
A
B
EN
VEE

VEE* ; VDD – VEE = +3 to +18V

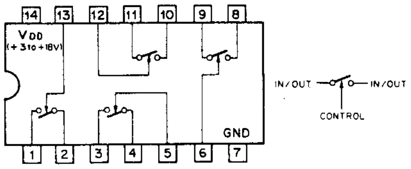
CONTROL INPUTS			"ON" CHANNEL
EN	B	A	
0	0	0	0
0	0	1	1
0	1	0	2
0	1	1	3
1	X	X	OPEN

0; LOW LEVEL
1; HIGH LEVEL
X; DON'T CARE.

TC4066BF (TOSHIBA) FLAT PACKAGE

C-MOS BILATERAL ANALOG SWITCH

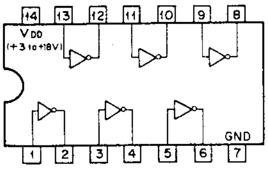
– TOP VIEW –

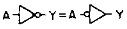

VDD (+3 to +18V)
GND
IN/OUT
IN/OUT
CONTROL

CONTROL	SWITCH
0	OFF
1	ON

0; LOW LEVEL
1; HIGH LEVEL

TC4069UBP (TOSHIBA)
C-MOS INVERTER
— TOP VIEW —


VDD (+3 to +18V)
GND

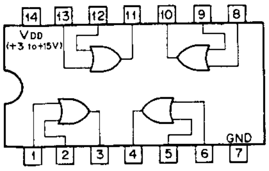


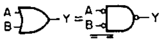
$Y = \overline{A}$

A	Y
0	1
1	0

0; LOW LEVEL
1; HIGH LEVEL

TC4071BP (TOSHIBA)
C-MOS 2-INPUT OR GATE
— TOP VIEW —


VDD (+3 to +15V)
GND



$Y = A + B = \overline{\overline{A} \cdot \overline{B}}$

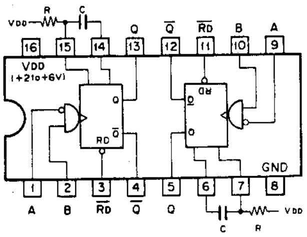
A	B	Y
0	0	0
0	1	1
1	0	1
1	1	1

0; LOW LEVEL
1; HIGH LEVEL

TC74HC123F (TOSHIBA) FLAT PACKAGE

C-MOS DUAL RETRIGGERABLE MONOSTABLE MULTIVIBRATOR

– TOP VIEW –

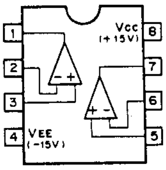

VDD
R
C
Q
Q̄
R̄D
B
A
VDD (+2 to +6V)
GND
A
B
R̄D
Q̄
Q
C
R
VDD

INPUT			OUTPUT	
R̄D	A	B	Q	Q̄
0	X	X	0	1
1	1	X	0	1
1	X	0	0	1
1	0	↑	⊓	⊔
1	↓	1	⊓	⊔
↑	0	1	⊓	⊔

0 ; LOW LEVEL
1 ; HIGH LEVEL
X ; DON'T CARE

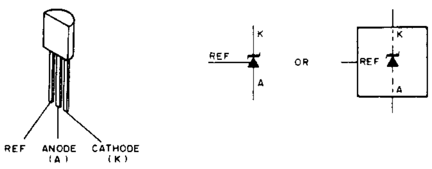
OUTPUT PULSE WIDTH = 0.46CR

TL082CP (TI)
OPERATIONAL AMPLIFIER
(J FET-INPUT)
— TOP VIEW —

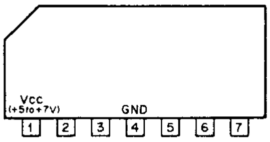

Vcc (+15V)
VEE (–15V)

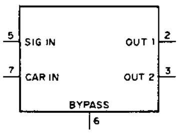
TL431CLP (TI)

ADJUSTABLE PRECISION SHUNT REGULATOR

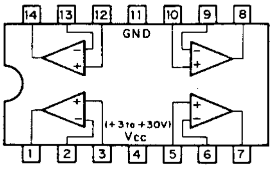

REF
ANODE (A)
CATHODE (K)
K
REF
A
OR
K
REF
A

uPC1037HA (NEC)
DOUBLE-BALANCED MODULATOR
— SIDE VIEW —

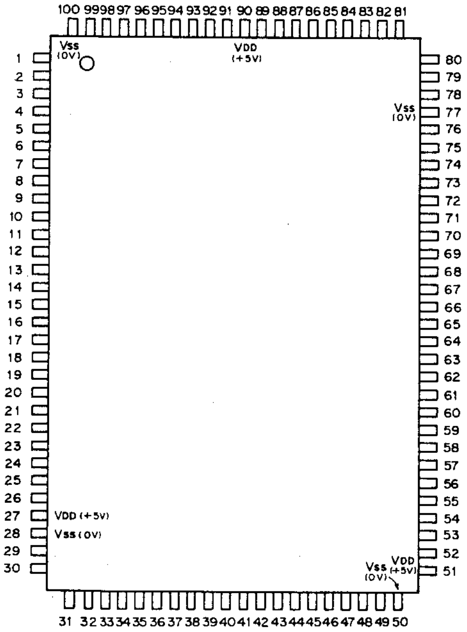

Vcc (+5 to +7V)
GND


SIG IN
CAR IN
OUT 1
OUT 2
BYPASS

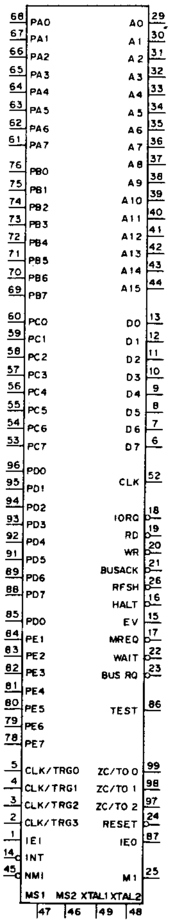
uPC324G2 (NEC) FLAT PACKAGE
QUAD. OP AMPLIFIER
— TOP VIEW —


GND
(+3 to +30V)
Vcc

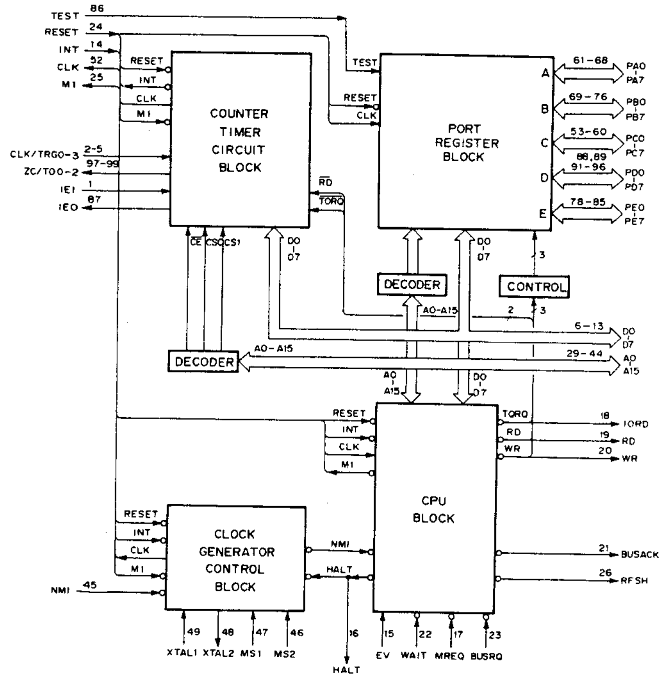
TMPZ84C011AF (TOSHIBA)
C-MOS 8 BIT MICROPROCESSOR
— TOP VIEW —


Vss (0V)
VDD (+5V)
Vss (0V)
VDD (+5V)
Vss (0V)
VDD (+5V)
Vss (0V)
100 99 98 97 96 95 94 93 92 91 90 89 88 87 86 85 84 83 82 81
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30
80 79 78 77 76 75 74 73 72 71 70 69 68 67 66 65 64 63 62 61 60 59 58 57 56 55 54 53 52 51
31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50

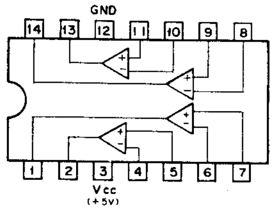
NO.	IN	OUT	SYMBOL	NO.	IN	OUT	SYMBOL
1	○		IEI	51			Vcc
2	○		CLK/TRG3	52		○	CLK
3	○		CLK/TRG2	53	○	○	PC7
4	○		CLK/TRG1	54	○	○	PC6
5	○		CLK/TRG0	55	○	○	PC5
6	○	○	D7	56	○	○	PC4
7	○	○	D6	57	○	○	PC3
8	○	○	D5	58	○	○	PC2
9	○	○	D4	59	○	○	PC1
10	○	○	D3	60	○	○	PC0
11	○	○	D2	61	○	○	PA7
12	○	○	D1	62	○	○	PA6
13	○	○	D0	63	○	○	PA5
14	○		$\overline{\text{INT}}$	64	○	○	PA4
15	○		EV	65	○	○	PA3
16		○	$\overline{\text{HALT}}$	66	○	○	PA2
17		○	$\overline{\text{MREQ}}$	67	○	○	PA1
18		○	$\overline{\text{IORQ}}$	68	○	○	PA0
19		○	$\overline{\text{RD}}$	69	○	○	PB7
20		○	$\overline{\text{WR}}$	70	○	○	PB6
21		○	$\overline{\text{BUSACK}}$	71	○	○	PB5
22	○		$\overline{\text{WAIT}}$	72	○	○	PB4
23	○		$\overline{\text{BUSREQ}}$	73	○	○	PB3
24	○		$\overline{\text{RESET}}$	74	○	○	PB2
25		○	$\overline{\text{M1}}$	75	○	○	PB1
26		○	$\overline{\text{RFSH}}$	76	○	○	PB0
27			Vcc	77			Vss
28			Vss	78	○	○	PE7
29		○	A0	79	○	○	PE6
30		○	A1	80	○	○	PE5
31		○	A2	81	○	○	PE4
32		○	A3	82	○	○	PE3
33		○	A4	83	○	○	PE2
34		○	A5	84	○	○	PE1
35		○	A6	85	○	○	PE0
36		○	A7	86	○		TEST
37		○	A8	87		○	IEO
38		○	A9	88	○	○	PD7
39		○	A10	89	○	○	PD6
40		○	A11	90			Vcc
41		○	A12	91	○	○	PD5
42		○	A13	92	○	○	PD4
43		○	A14	93	○	○	PD3
44		○	A15	94	○	○	PD2
45	○		$\overline{\text{NMI}}$	95	○	○	PD1
46	○		MS2	96	○	○	PD0
47	○		MS1	97		○	ZC/TO2
48		○	XTAL2	98		○	ZC/TO1
49	○		XTAL1	99		○	ZC/TO0
50			Vss	100			Vss


PA0 PA1 PA2 PA3 PA4 PA5 PA6 PA7
PB0 PB1 PB2 PB3 PB4 PB5 PB6 PB7
PC0 PC1 PC2 PC3 PC4 PC5 PC6 PC7
PD0 PD1 PD2 PD3 PD4 PD5 PD6 PD7
PE0 PE1 PE2 PE3 PE4 PE5 PE6 PE7
CLK/TRG0 CLK/TRG1 CLK/TRG2 CLK/TRG3
IEI
INT
NMI
MS1 MS2 XTAL1 XTAL2
A0 A1 A2 A3 A4 A5 A6 A7 A8 A9 A10 A11 A12 A13 A14 A15
D0 D1 D2 D3 D4 D5 D6 D7
CLK
IORQ
RD
WR
BUSACK
RFSH
HALT
EV
MREQ
WAIT
BUS RQ
TEST
ZC/TO 0
ZC/TO 1
ZC/TO 2
RESET
IEO
M1

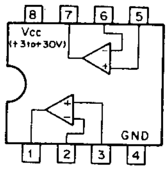
A0–A15 ; 3-STATE ADDRESS BUS OUTPUTS
BUSACK ; BUS ACKNOWLEDGE OUTPUT
BUS REQ ; BUS REQUEST INPUT
CLK ; CLOCK OUTPUT
CLK/TRG0–3 ; EXTERNAL CLOCK / TIMER TRIGGER0–3 INPUTS
D0–D7 ; 3-STATE DATA BUS INPUTS/OUTPUTS
EV ; EVALUATER INPUT
HALT ; HALT OUTPUT
IEI/IEO ; CTC INTERRUPT ENABLE INPUT/OUTPUT
INT ; MASKABLE INTERRUPT REQUEST INPUT
IORQ ; 3-STATE I/O REQUEST OUTPUT
M1 ; 3-STATE MACHINE CYCLE 1 OUTPUT
MREQ ; 3-STATE REQUEST OUTPUT
MS1/MS2 ; MODE SELECT 1/2 INPUTS
NMI ; NON-MASKABLE INTERRUPT REQUEST INPUT
PA0–PA7 ;
PB0–PB7 ;
PC0–PC7 ; } 3-STATE I/O PORT
PD0–PD7 ;
PE0–PE7 ;
RD ; 3-STATE READ OUTPUT
RESET ; RESET INPUT
RFSH ; REFRESH OUTPUT
TEST ; TEST INPUT
WAIT ; WAIT REQUEST INPUT
WR ; 3-STATE WRITE OUTPUT
ZC/TO0–2 ; ZERO COUNT/TIME OUT 0–2 OUTPUTS


TEST 86
RESET 24
INT 14
CLK 52
M1 25
CLK/TRG0–3 2–5
ZC/TO0–2 97–99
IEI 1
IEO 87
COUNTER TIMER CIRCUIT BLOCK
CE CS0 CS1
D0 D7
RD
IORQ
PORT REGISTER BLOCK
A B C D E
61–68 PA0 PA7
69–76 PB0 PB7
53–60 PC0 PC7
88,89 91–96 PD0 PD7
78–85 PE0 PE7
DECODER
CONTROL
A0–A15
6–13 D0 D7
29–44 A0 A15
DECODER
CPU BLOCK
IORQ 18
RD 19
WR 20
BUSACK 21
RFSH 26
CLOCK GENERATOR CONTROL BLOCK
NMI 45
NMI
HALT
49 48 47 46
XTAL1 XTAL2 MS1 MS2
16 HALT
15 22 17 23
EV WAIT MREQ BUSRQ

uPC339C (NEC)
COMPARATOR
- TOP VIEW -

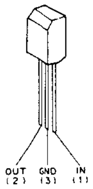

GND
14 13 12 11 10 9 8
1 2 3 4 5 6 7
Vcc (+5V)

uPC358C (NEC)
uPC358G2 (NEC) FLAT PACKAGE
DUAL OPERATIONAL AMPLIFIERS
— TOP VIEW —

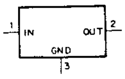

8 7 6 5
Vcc (+3 to +30V)
GND
1 2 3 4

uPC78L ? ?A (NEC)

POSITIVE VOLTAGE REGULATOR (100mA)


OUT (2)
GND (3)
IN (1)

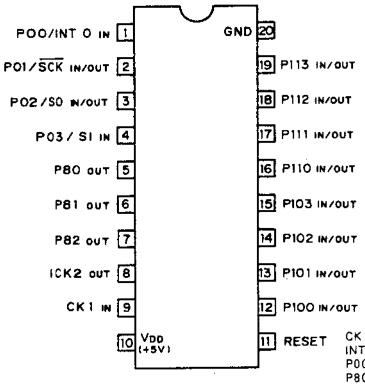
OUTPUT VOLTAGE	uPC78L??	UPC78L??A
5V	uPC78L05	uPC78L05A
6V		
8V	uPC78L08	
9V		
12V	uPC78L12	
15V	uPC78L15	

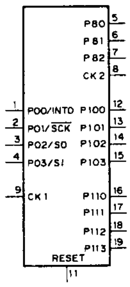

1
IN
OUT
2
GND
3

uPD7564 (NEC)

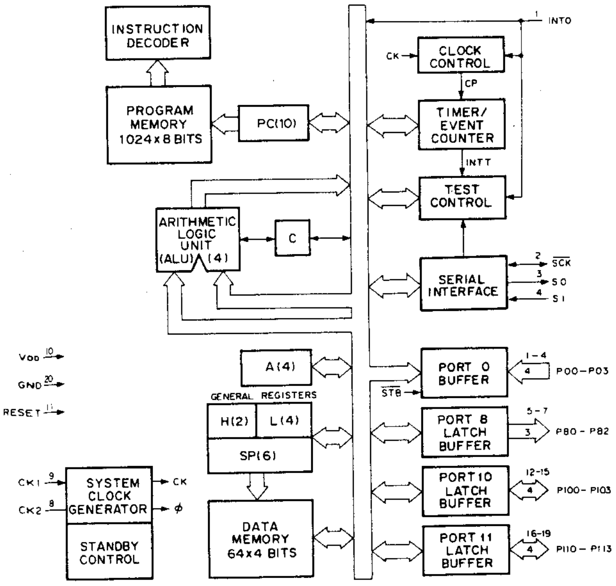
C-MOS SINGLE CHIP 4-BIT MICROCOMPUTER

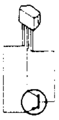
– TOP VIEW –


P00/INT 0 IN 1
P01/SCK IN/OUT 2
P02/SO IN/OUT 3
P03/SI IN 4
P80 OUT 5
P81 OUT 6
P82 OUT 7
ICK2 OUT 8
CK1 IN 9
10 VDD (+5V)
GND 20
19 P113 IN/OUT
18 P112 IN/OUT
17 P111 IN/OUT
16 P110 IN/OUT
15 P103 IN/OUT
14 P102 IN/OUT
13 P101 IN/OUT
12 P100 IN/OUT
11 RESET

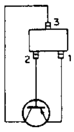

P80 5
P81 6
P82 7
CK2 8
1 P00/INTO
2 P01/SCK
3 P02/SO
4 P03/SI
9 CK1
P100 12
P101 13
P102 14
P103 15
P110 16
P111 17
P112 18
P113 19
RESET
11

CK1, CK2 : SYSTEM CLOCK INPUTS
INTO : TESTABLE INPUT
P00 – P03 : PORT 0 INPUTS/OUTPUTS
P80 – P82 : PORT 8 OUTPUTS
P100 – P103 : PORT 10 INPUTS/OUTPUTS
P110 – P113 : PORT 11 INPUTS/OUTPUTS
RESET : RESET INPUT
SCK : SERIAL CLOCK INPUT/OUTPUT
SI : SERIAL DATA INPUT
SO : SERIAL DATA OUTPUT

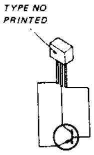

INSTRUCTION DECODER
PROGRAM MEMORY 1024x8 BITS
PC(10)
ARITHMETIC LOGIC UNIT (ALU) (4)
C
A(4)
GENERAL REGISTERS
H(2)
L(4)
SP(6)
DATA MEMORY 64x4 BITS
VDD 10
GND 20
RESET 11
CK1 9
CK2 8
SYSTEM CLOCK GENERATOR
CK
φ
STANDBY CONTROL
1 INTO
CK
CLOCK CONTROL
CP
TIMER/EVENT COUNTER
INTT
TEST CONTROL
SERIAL INTERFACE
2 SCK
3 SO
4 SI
PORT 0 BUFFER
STB
1–4
4
P00–P03
PORT 8 LATCH BUFFER
5–7
3
P80 – P82
PORT 10 LATCH BUFFER
12-15
4
P100– P103
PORT 11 LATCH BUFFER
16-19
4
P110– P113



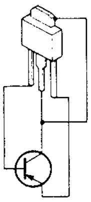
2SA1115



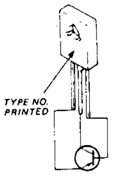
2SA1122
2SA1162
2SA1226
2SA812


TYPE NO PRINTED

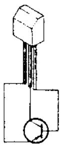
2SA1175



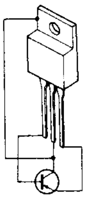
2SA1385


TYPE NO. PRINTED

2SB649A

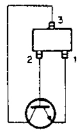


2SB733

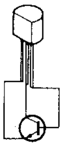


2SB856

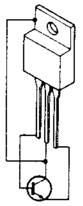
TOP VIEW (SCALE 4/1)



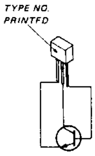
2SC1623
2SC2223
2SC2714
2SC2715
2SC3326
2SC3735



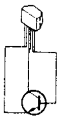
2SC1815
2SC2878



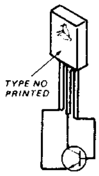
2SC1826


TYPE NO. PRINTED

2SC2785
2SC2785E

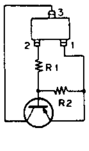


2SC3327
2SC403SP


TYPE NO PRINTED

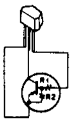
2SD669A

TOP VIEW (SCALE 4/1)



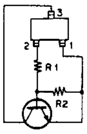
DTA114EK (R1 = 10K, R2 = 10K)
DTA124EK (R1 = 22K, R2 = 22K)
DTA144EK (R1 = 47K, R2 = 47K)

TRANSISTOR, DIODE

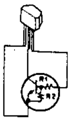


DTA124XS (R1=22K, R2=47K)
DTA143XS (R1=4.7K, R2=10K)
DTA144ES (R1=47K, R2=47K)

TOP VIEW (SCALE 4/1)



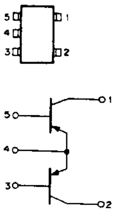
DTC114EK (R1 = 10K, R2 = 10K)
DTC124EK (R1 = 22K, R2 = 22K)
DTC144EK (R1 = 47K, R2 = 47K)



DTC144ES (R1=47K, R2=47K)

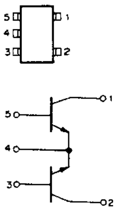
(SCALE 6/1)
TOP VIEW

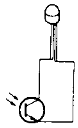
FMS2


5
4
3
1
2
5
4
3
1
2

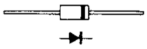
(SCALE 6/1)
TOP VIEW

FMW1


5
4
3
1
2
5
4
3
1
2

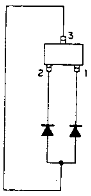


NJL7141E

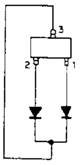


10E-2
1SS119
1SS133

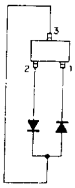
TOP VIEW (SCALE 4/1) 1S2835



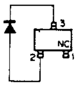
TOP VIEW (SCALE 4/1) 1S2837



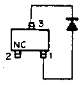
TOP VIEW (SCALE 4/1) 1SS123

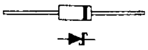


TOP VIEW (SCALE 4/1) 1SS193

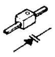


TOP VIEW (SCALE 4/1) 1SS196



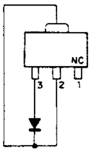


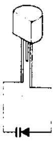
1SS97
1SS99



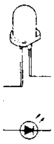
1T33C

TOP VIEW (SCALE 4/1) *E10DS2*

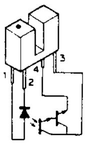




FC54M

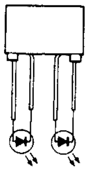


GL-5HD5 : RED



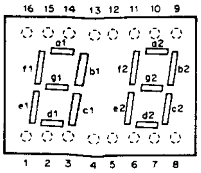
GP-1L52
GP-1L53

– SIDE VIEW –
(SCALE 2/1)

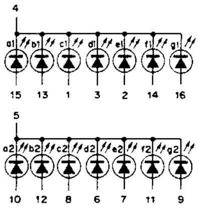


LT-9200D : RED
LT-9200H : YELLOW

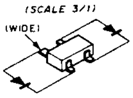
DUAL 7-SEGMENT LED
— TOP VIEW —


16 15 14 13 12 11 10 9
a1
f1
b1
g1
e1
c1
d1
a2
f2
b2
g2
e2
c2
d2
1 2 3 4 5 6 7 8

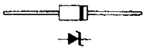
LB402VK (ROHM)


4
a1
b1
c1
d1
e1
f1
g1
15 13 1 3 2 14 16
5
a2
b2
c2
d2
e2
f2
g2
10 12 8 6 7 11 9

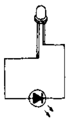
(SCALE 3/1)



MA159

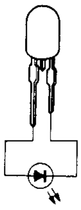


RD??ESB?

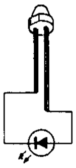


TLG124A ; GREEN

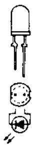
(SCALE 2/1)



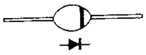
TLG256 ; GREEN
TLY256 ; YELLOW



TLUG144 ; GREEN
TLUY144 ; YELLOW



TLUG154 ; GREEN



U05E

SECTION 13
PRINTED WIRING BOARD AND SCHEMATIC DIAGRAM

CIRCUIT FUNCTION OF THE PRINTED CIRCUIT BOARDS

Mechanical deck

SYSTEM	BOARD	CIRCUIT FUNCTION
VIDEO	FR-43	Head Amp/Flying Erase
	HK-5	Y/C Video process
	RP-73	REC/PB Head Amp (LP)
	RP-103	REC/PB Head Amp (SP)
AUDIO	MB-19	PCM Audio
	PA-27	PCM Audio Analog
	PD-19	PCM Audio Digital
SYSCON SERVO	TS-74	Tape Top/End Sensor
	IG-4	Terminal
	LD-1	Tape Sensor
	MS-4	Mode Switch
	LS-9	Loading Switch
	RS-31	Mechanism Control
	MD-23P	Capstan/Drum Drive
	SE-10P	Servo, Syscon
Others	FP-84	Connection
	FP-206	Connection
	FP-122	Connection

SYSTEM	BOARD	CIRCUIT FUNCTION
VIDEO	YC-46	YC Separator
	VO-30	Video Interface
AUDIO	AU-127	Audio Input/Output Amp
	AA-16	XLR Input/Output Amp
SYSCON	SY-145A	System Control
	KY-162	Function Key Board
	DP-101	Display
	DD-12	Display Drive
	PTC-32	Search Dial
DIGITAL PROCESS	DI-12	Digital CNR
	DI-13	Read Timing Control Pulse Generator
POWER	DC-45A	DC Supply
	UR-14E	Switching Regulator
Others	LP-52	Mode Display
	CP-141	Connector Panel
	CP-162	S Video Connector Panel
	SW-346	Audio Level Control
	SW-347A	Audio select SW
	SW-348	Remote Panel SW
	MC-28	Mic. Jack
	HP-42	Head phones Level
	MT-57	Audio Meter Level
	RM-83	9-pin Connector

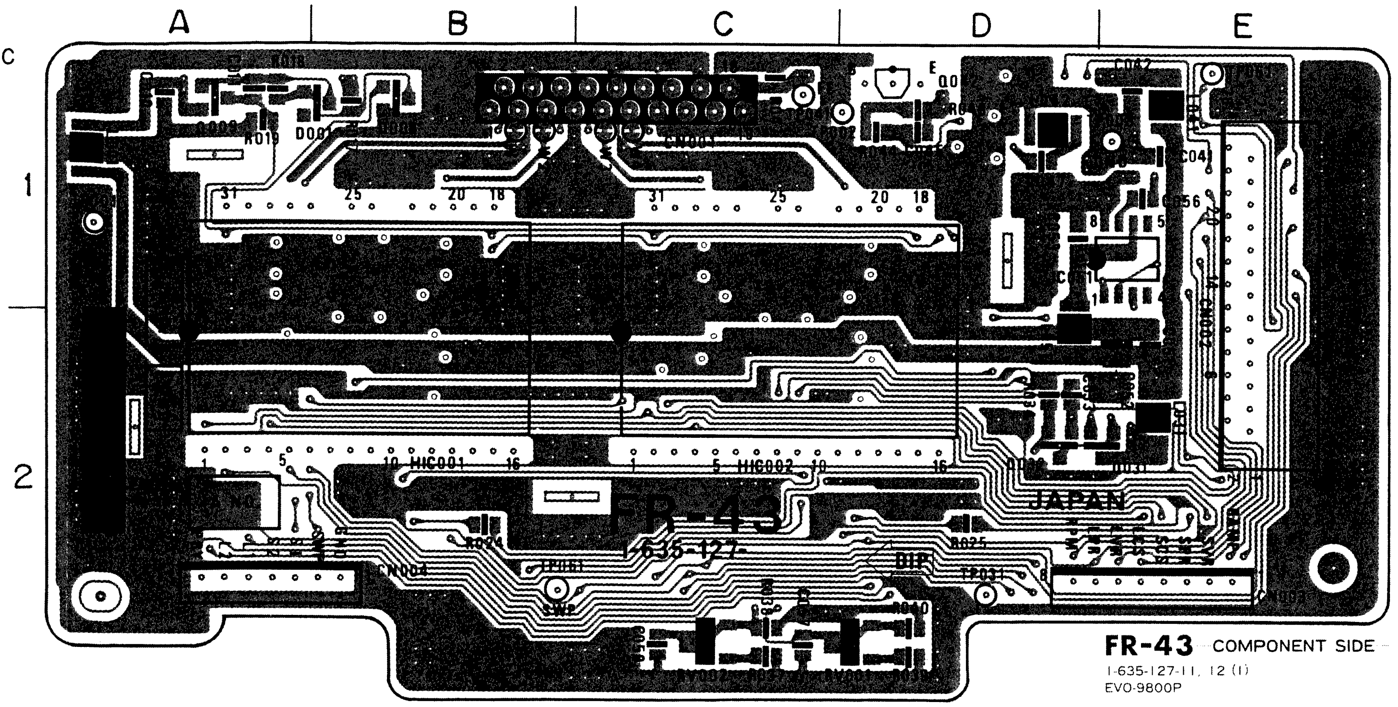
FR-43 ; HEAD AMPLIFIER/FLYING ERASE
RP-103 ; REC/PB HEAD AMPLIFIER (SP)
RP-73 (LP) ; REC/PB HEAD AMPLIFIER (LP)

FR-43(1-635-127-11, 12)C

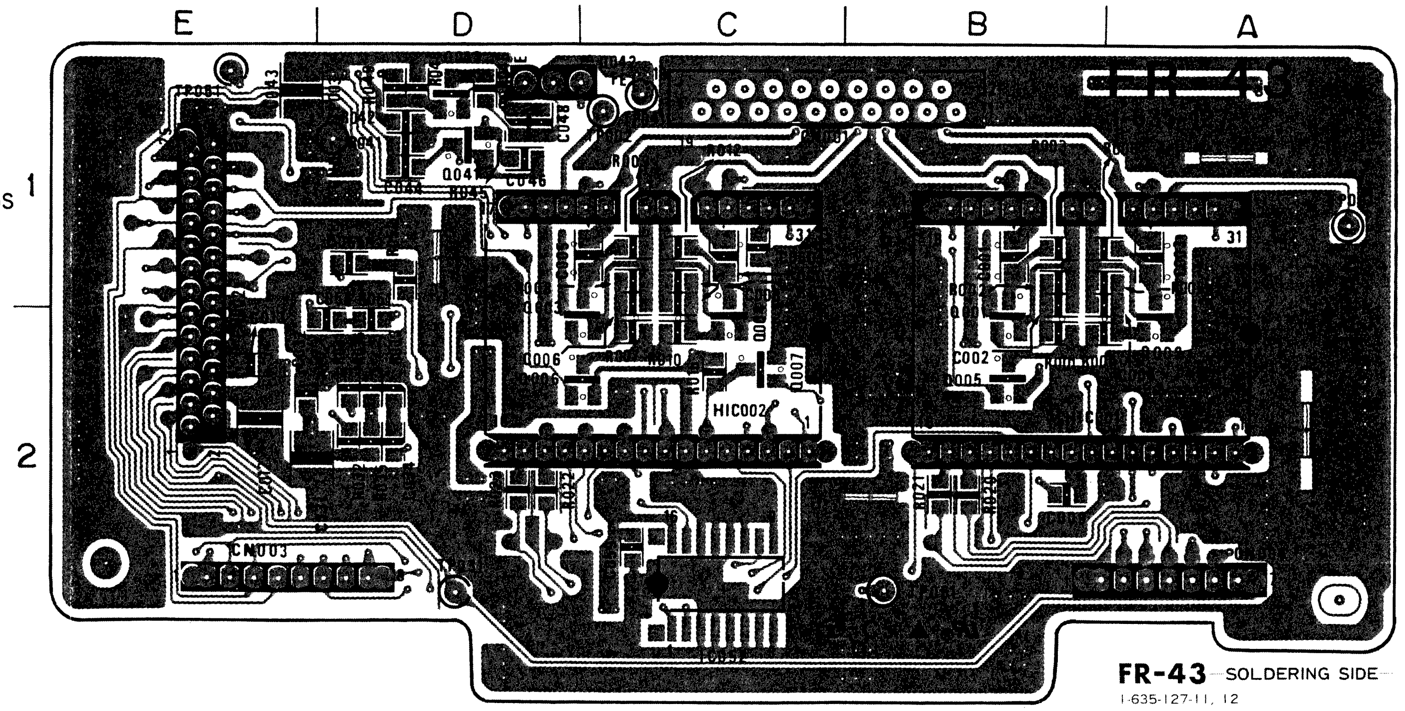
CN001	C-1
CN002	E-1
CN003	E-2
CN004	A-2
D001	A-1
HIC001	B-2
HIC002	C-2
IC051	E-1
Q008	B-1
Q009	A-1
Q031	E-2
Q032	D-2
Q042	D-1
RV001	C-2
RV002	C-2
TP001	A-1
TP002	C-1
TP003	E-1
TP031	D-2
TP041	C-1
TP051	E-1
TP061	B-2

FR-43(1-635-127-11, 12)S

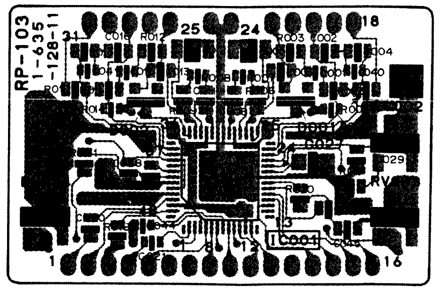
Q001	B-2
Q002	A-2
Q003	D-2
Q004	C-2
Q005	B-2
Q006	D-2
Q007	C-2
Q041	D-1
Q043	D-1
IC052	C-2


A
B
C
D
E
1
2
HIC001
HIC002
JAPAN
FR-43
1-635-127-

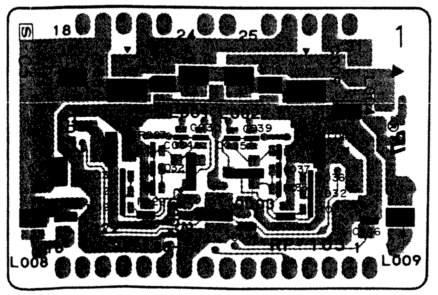
FR-43 COMPONENT SIDE
1-635-127-11, 12 (1)
EVO-9800P


E
D
C
B
A
1
2
FR-43
HIC002
CN003
IC052

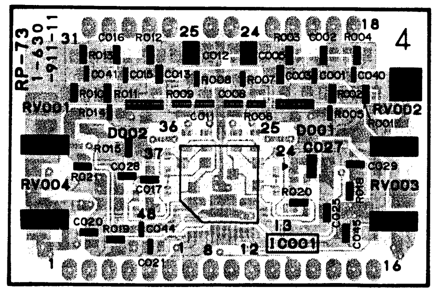
FR-43 SOLDERING SIDE
1-635-127-11, 12
EVO-9800P


RP-103
1-635
-128-11
IC001

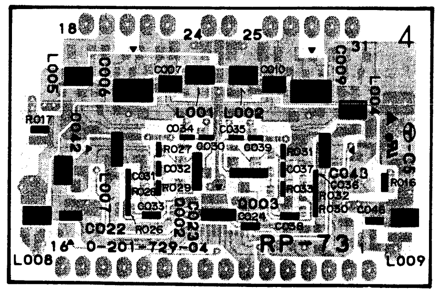
RP-103 —COMPONENT SIDE—
1-635-128-11(1)
EVO-9800P



RP-103 —SOLDERING SIDE—
1-635-128-11(1)
EVO-9800P


RP-73
1-630
-911-11
RV001
RV002
RV003
RV004
IC001

RP-73(LP)
—COMPONENT SIDE—
1-630-911-11(1)
EVO-9800
EVO-9800P

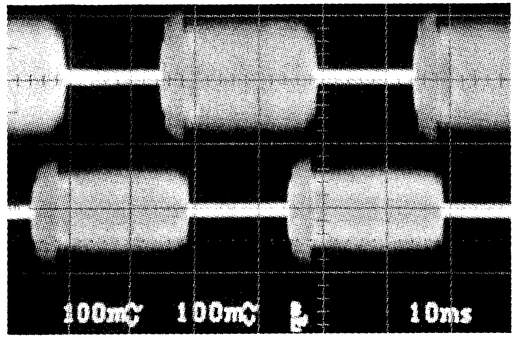

L008
L009
0-201-729-04
RP-73

RP-73(LP)
—SOLDERING SIDE—
1-630-911-11(1)
EVO-9800
EVO-9800P

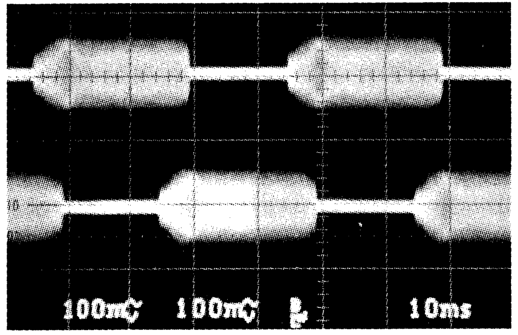
FR-43; HEAD AMPLIFIER/FLYING ERASE
RP-103; REC/PB HEAD MAPLIFIER (SP)
RP-73 (LP); REC/PB HEAD AMPLIFIER (LP)

FR-43

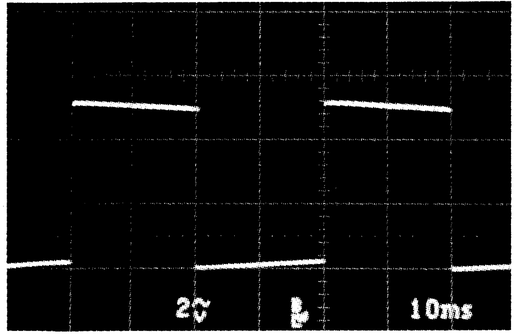
① CH-1: CN004-3
CH-2: CN004-4 PB mode



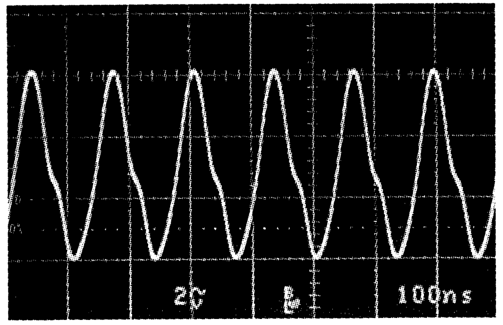
② CH-1: CN004-5
CH-2: CN004-6 PB mode



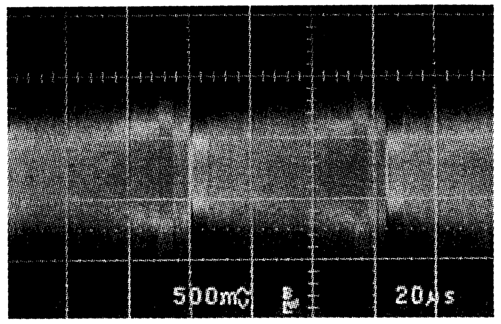
③ TP061 PB mode



④ TP041 REC mode

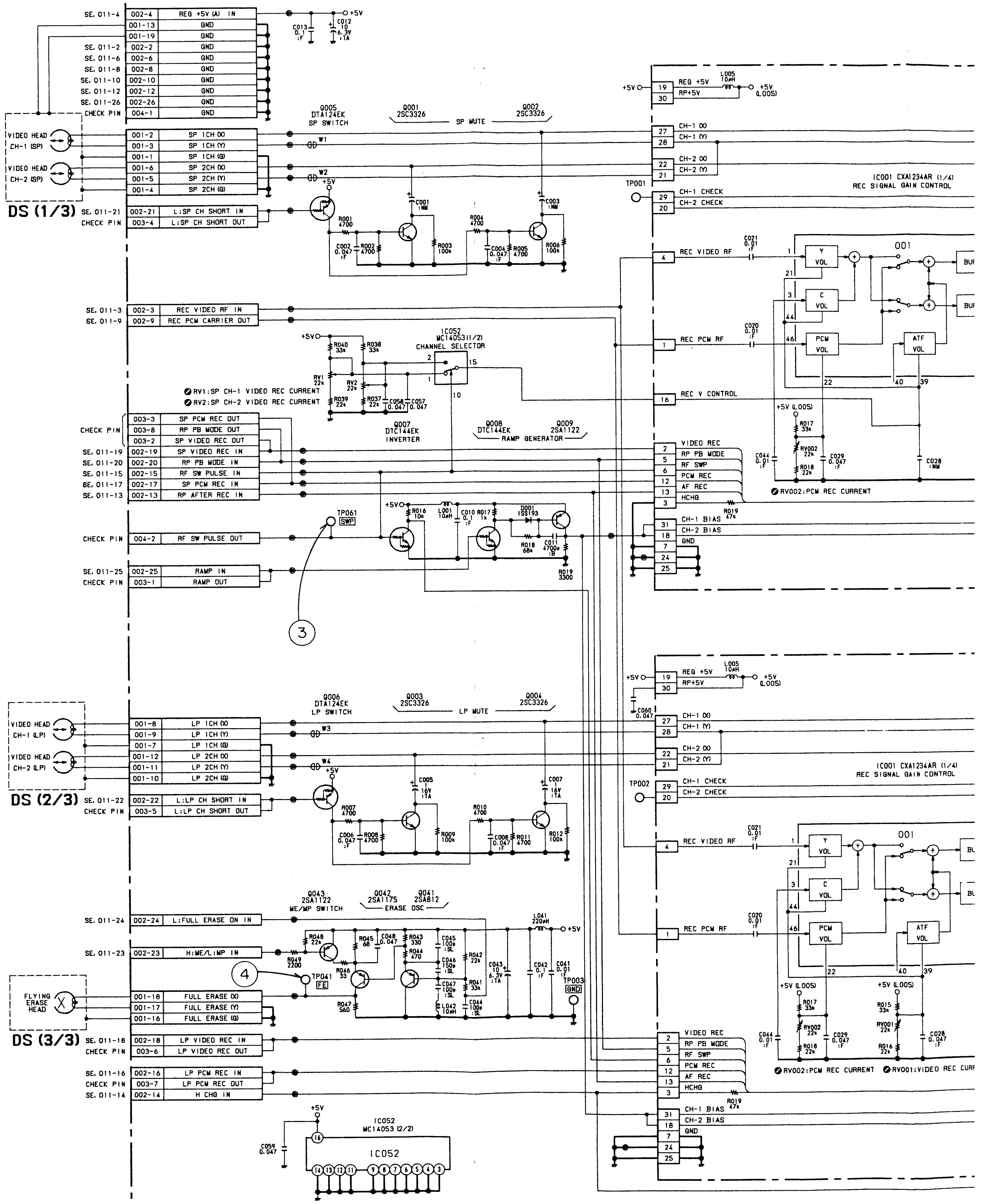


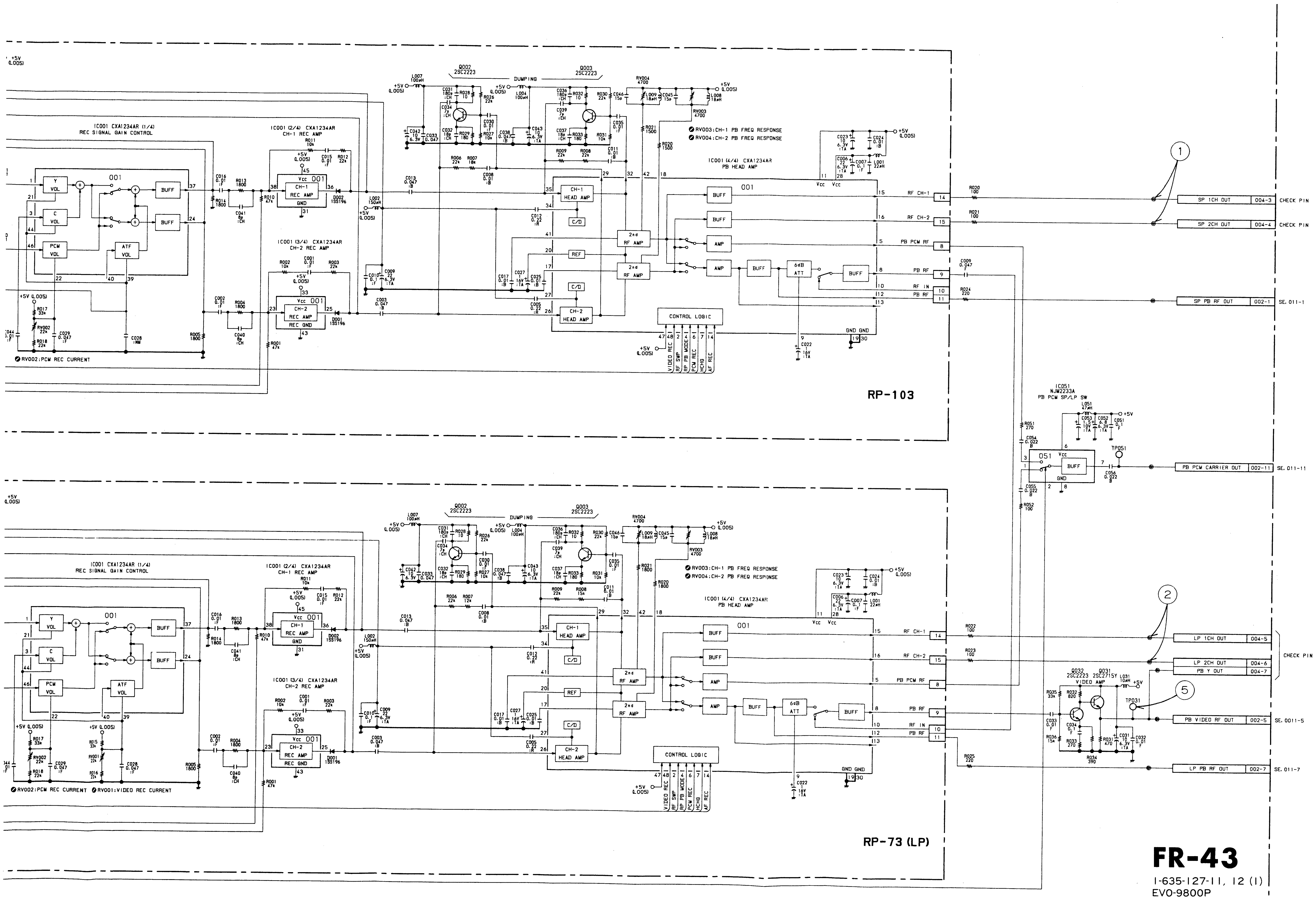
⑤ TP031 PB mode



Measurement Condition

- Input Signal : Color Bars
- Cassette Tape : Alignment tape WR5-8CSE
  Alignment tape WR5-8CLE
  (Color Bars Signal)


DS (1/3)
DS (2/3)
DS (3/3)
VIDEO HEAD CH-1 (SP)
VIDEO HEAD CH-2 (SP)
VIDEO HEAD CH-1 (LP)
VIDEO HEAD CH-2 (LP)
FLYING ERASE HEAD
REG +5V (A) IN
GND
CHECK PIN
SP 1CH (X)
SP 1CH (Y)
SP 1CH (G)
SP 2CH (X)
SP 2CH (Y)
SP 2CH (G)
L:SP CH SHORT IN
L:SP CH SHORT OUT
REC VIDEO RF IN
REC PCM CARRIER OUT
SP PCM REC OUT
RP PB MODE OUT
SP VIDEO REC OUT
SP VIDEO REC IN
RP PB MODE IN
RF SW PULSE IN
SP PCM REC IN
RP AFTER REC IN
RF SW PULSE OUT
RAMP IN
RAMP OUT
LP 1CH (X)
LP 1CH (Y)
LP 1CH (G)
LP 2CH (X)
LP 2CH (Y)
LP 2CH (G)
L:LP CH SHORT IN
L:LP CH SHORT OUT
L:FULL ERASE ON IN
H:ME/L:MP IN
FULL ERASE (X)
FULL ERASE (Y)
FULL ERASE (G)
LP VIDEO REC IN
LP VIDEO REC OUT
LP PCM REC IN
LP PCM REC OUT
H CHG IN
Q005 DTA124EK SP SWITCH
Q001 2SC3326
SP MUTE
Q002 2SC3326
Q006 DTA124EK LP SWITCH
Q003 2SC3326
LP MUTE
Q004 2SC3326
IC052 MC14053 (1/2) CHANNEL SELECTOR
RV1:SP CH-1 VIDEO REC CURRENT
RV2:SP CH-2 VIDEO REC CURRENT
Q007 DTC144EK INVERTER
Q008 DTC144EK
Q009 2SA1122
RAMP GENERATOR
TP061 SWP
D001 1SS193
Q043 2SA1122 ME/MP SWITCH
Q042 2SA1175
Q041 2SA812
ERASE OSC
TP041 FE
TP003 GND
IC052 MC14053 (2/2)
IC052
TP001
TP002
REG +5V
RP+5V
CH-1 (X)
CH-1 (Y)
CH-2 (X)
CH-2 (Y)
CH-1 CHECK
CH-2 CHECK
IC001 CXA1234AR (1/4) REC SIGNAL GAIN CONTROL
REC VIDEO RF
REC PCM RF
REC V CONTROL
VIDEO REC
RP PB MODE
RF SWP
PCM REC
AF REC
HCHG
CH-1 BIAS
CH-2 BIAS
GND
Y VOL
C VOL
PCM VOL
ATF VOL
RV002:PCM REC CURRENT
RV001:VIDEO REC CURRENT
+5V
③
④

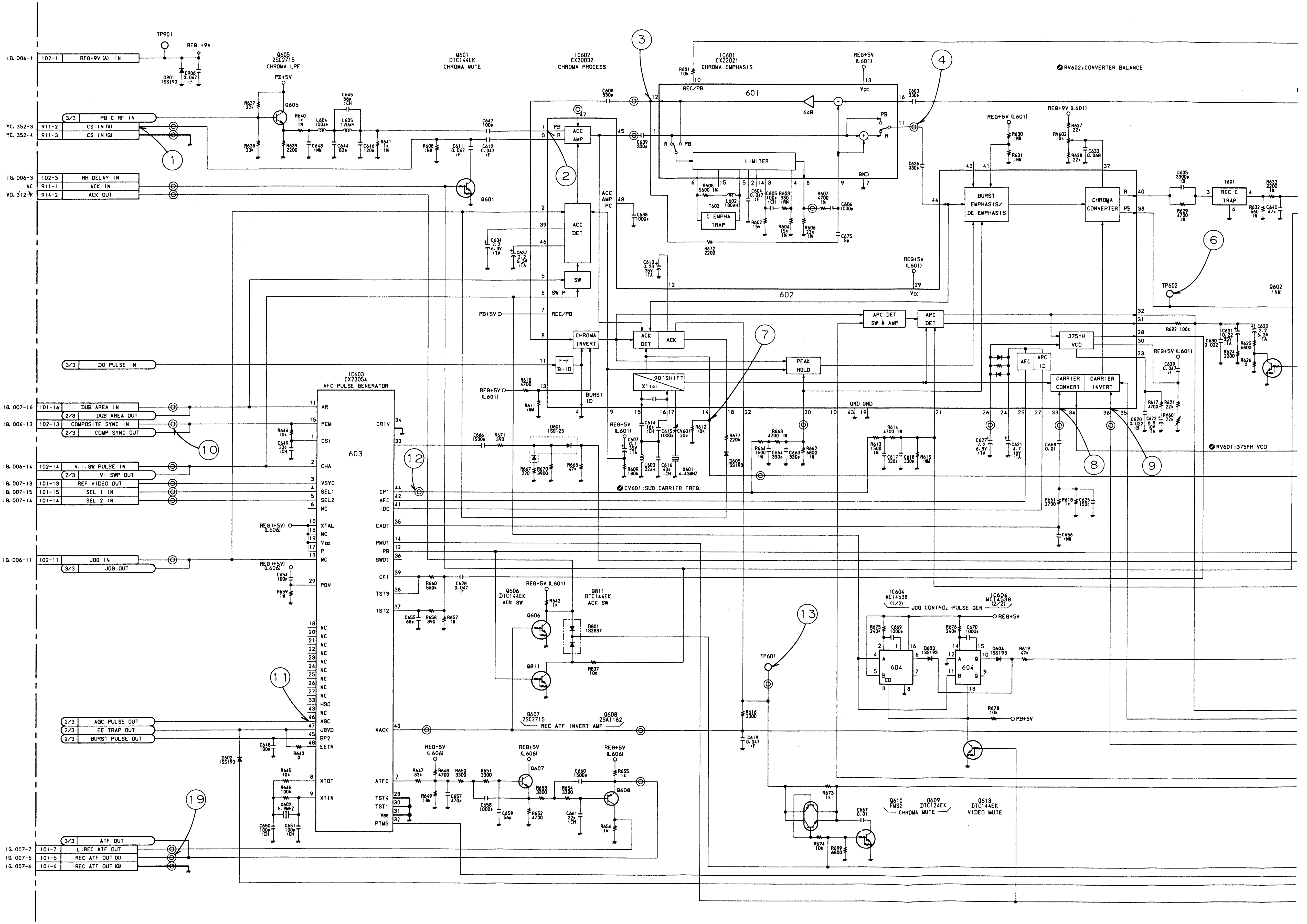

IC001 CXA1234AR (1/4)
REC SIGNAL GAIN CONTROL
IC001 (2/4) CXA1234AR
CH-1 REC AMP
IC001 (3/4) CXA1234AR
CH-2 REC AMP
IC001 (4/4) CXA1234AR
PB HEAD AMP
Q002
2SC2223
Q003
2SC2223
DUMPING
RV003:CH-1 PB FREQ RESPONSE
RV004:CH-2 PB FREQ RESPONSE
RV002:PCM REC CURRENT
RV001:VIDEO REC CURRENT
Y VOL
C VOL
PCM VOL
ATF VOL
BUFF
CH-1 REC AMP
CH-2 REC AMP
CH-1 HEAD AMP
CH-2 HEAD AMP
C/D
REF
2nd RF AMP
AMP
6dB ATT
CONTROL LOGIC
VIDEO REC
RF SWP
RP PB MODE
PCM REC
HCHG
AF REC
GND GND
RF CH-1
RF CH-2
PB PCM RF
PB RF
RF IN
RP-103
RP-73 (LP)
SP 1CH OUT 004-3 CHECK PIN
SP 2CH OUT 004-4 CHECK PIN
SP PB RF OUT 002-1 SE. 011-1
IC051
NJM2233A
PB PCM SP/LP SW
TP051
PB PCM CARRIER OUT 002-11 SE. 011-11
LP 1CH OUT 004-5
LP 2CH OUT 004-6
PB Y OUT 004-7
CHECK PIN
Q032 2SC2223
Q031 2SC2715Y
VIDEO AMP
TP031
PB VIDEO RF OUT 002-5 SE. 0011-5
LP PB RF OUT 002-7 SE. 011-7
①
②
⑤
+5V (L005)

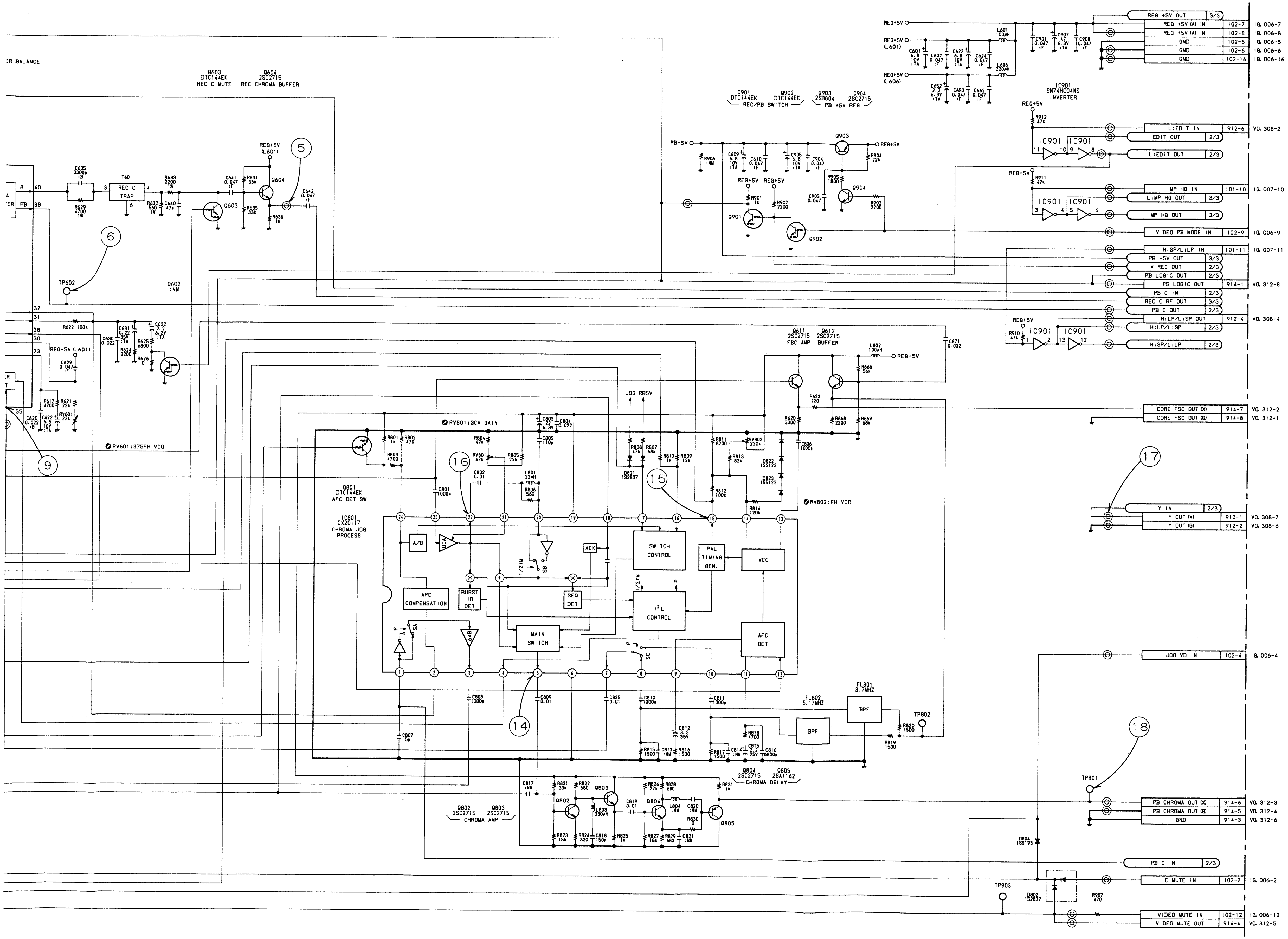
FR-43

1-635-127-11, 12 (1)
EVO-9800P

NOTE:NM IS NOT MOUNT

HK-5 (1/3); CHROMA PROCESS


TP901
REG +9V
D901 1SS193
C906 0.047
Q605 2SC2715 CHROMA LPF
PB+5V
Q601 DTC144EK CHROMA MUTE
IC602 CX20032 CHROMA PROCESS
IC601 CX22021 CHROMA EMPHASIS
REG+5V (L601)
RV602:CONVERTER BALANCE
IG 006-1 102-1 REG+9V (A) IN
3/3 PB C RF IN
YC 352-3 911-2 CS IN (X)
YC 352-4 911-3 CS IN (G)
IG 006-3 102-3 HH DELAY IN
NC 911-1 ACK IN
VC 312-7 914-2 ACK OUT
ACC AMP
ACC DET
SW
SW P
REC/PB
CHROMA INVERT
F-F B-ID
BURST ID
ACC AMP PC
LIMITER
C EMPHA TRAP
601
602
6dB
REC/PB
Vcc
GND
BURST EMPHASIS/ DE EMPHASIS
CHROMA CONVERTER
REC C TRAP
T601
TP602
Q602
APC DET SW & AMP
APC DET
ACK DET
ACK
PEAK HOLD
90°SHIFT
X'tal
375fH VCO
AFC
APC ID
CARRIER CONVERT
CARRIER INVERT
GND GND
3/3 DO PULSE IN
IG 007-16 101-16 DUB AREA IN
2/3 DUB AREA OUT
IG 006-13 102-13 COMPOSITE SYNC IN
2/3 COMP SYNC OUT
IG 006-14 102-14 V.I.SW PULSE IN
2/3 VI SWP OUT
IG 007-13 101-13 REF VIDEO OUT
IG 007-15 101-15 SEL 1 IN
IG 007-14 101-14 SEL 2 IN
IG 006-11 102-11 JOG IN
3/3 JOG OUT
IC603 CX23054 AFC PULSE GENERATOR
603
AR PCM CSI CHA VSYC SEL1 SEL2 NC XTAL NC VDD P NC PON
CRIV CP1 AFC IDD CAOT PMUT PB SWOT CK1 TST3 TST2 XACK ATFO TST4 TST1 Vss PTMB
HSD AGC JGVD BP2 EETR XTOT XTIN
REG (+5V) (L606)
X602 5.9MHz
D601 1SS123
D605 1SS193
X601 4.43MHz
CV601:SUB CARRIER FREQ.
RV601:375FH VCO
Q606 DTC144EK ACK SW
Q811 DTC144EK ACK SW
D811 1SS237
Q607 2SC2715 Q608 2SA1162 REC ATF INVERT AMP
TP601
IC604 MC14538 (1/2) IC604 MC14538 (2/2) JOG CONTROL PULSE GEN
604
D603 1SS193
D604 1SS193
REG+5V
PB+5V
Q610 FMS2 Q609 DTC124EK CHROMA MUTE
Q613 DTC144EK VIDEO MUTE
2/3 AGC PULSE OUT
2/3 EE TRAP OUT
2/3 BURST PULSE OUT
D602 1SS193
3/3 ATF OUT
IG 007-7 101-7 L:REC ATF OUT
IG 007-5 101-5 REC ATF OUT (X)
IG 007-6 101-6 REC ATF OUT (G)
①
②
③
④
⑥
⑦
⑧
⑨
⑩
⑪
⑫
⑬
⑲


ER BALANCE
Q603 DTC144EK REC C MUTE
Q604 2SC2715 REC CHROMA BUFFER
T601 REC C TRAP
REG+5V (L601)
RV601:375FH VCO
TP602
Q602 :NM
Q901 DTC144EK
Q902 DTC144EK REC/PB SWITCH
Q903 2SB804
Q904 2SC2715 PB +5V REG
PB+5V
REG+5V
REG+5V (L601)
REG+5V (L606)
L601 100μH
L606 220μH
IC901 SN74HC04NS INVERTER
R912 47k
R911 47k
R910 47k
IC901
REG +5V OUT 3/3
REG +5V (A) IN 102-7 IG 006-7
REG +5V (A) IN 102-8 IG 006-8
GND 102-5 IG 006-5
GND 102-6 IG 006-6
GND 102-16 IG 006-16
L:EDIT IN 912-6 VG 308-2
EDIT OUT 2/3
L:EDIT OUT 2/3
MP HG IN 101-10 IG 007-10
L:MP HG OUT 3/3
MP HG OUT 3/3
VIDEO PB MODE IN 102-9 IG 006-9
H:SP/L:LP IN 101-11 IG 007-11
PB +5V OUT 3/3
V REC OUT 2/3
PB LOGIC OUT 2/3
PB LOGIC OUT 914-1 VG 312-8
PB C IN 2/3
REC C RF OUT 3/3
PB C OUT 2/3
H:LP/L:SP OUT 912-4 VG 308-4
H:LP/L:SP 2/3
H:SP/L:LP 2/3
Q611 2SC2715 FSC AMP
Q612 2SC2715 BUFFER
L802 100μH
JOG RB5V
RV801:GCA GAIN
RV802:FH VCO
Q801 DTC144EK APC DET SW
IC801 CX20117 CHROMA JOG PROCESS
A/B
GCA
ACK
SWITCH CONTROL
PAL TIMING GEN.
VCO
APC COMPENSATION
BURST ID DET
SEQ DET
I²L CONTROL
BPF
MAIN SWITCH
AFC DET
1/2H
FL801 3.7MHz
FL802 5.17MHz
BPF
TP802
Q802 2SC2715
Q803 2SC2715 CHROMA AMP
Q804 2SC2715
Q805 2SA1162 CHROMA DELAY
CORE FSC OUT (X) 914-7 VG 312-2
CORE FSC OUT (G) 914-8 VG 312-1
Y IN 2/3
Y OUT (X) 912-1 VG 308-7
Y OUT (G) 912-2 VG 308-6
JOG VD IN 102-4 IG 006-4
TP801
PB CHROMA OUT (X) 914-6 VG 312-3
PB CHROMA OUT (G) 914-5 VG 312-4
GND 914-3 VG 312-6
D804 1SS193
PB C IN 2/3
C MUTE IN 102-2 IG 006-2
TP903
D802 1S2837
R907 470
VIDEO MUTE IN 102-12 IG 006-12
VIDEO MUTE OUT 914-4 VG 312-5
⑤
⑥
⑨
⑭
⑮
⑯
⑰
⑱

13-4 13-4

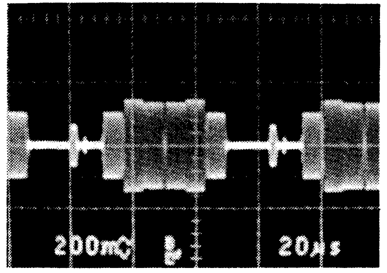
| I | J | K | L | M | N | O | P |

HK-5(1/3)

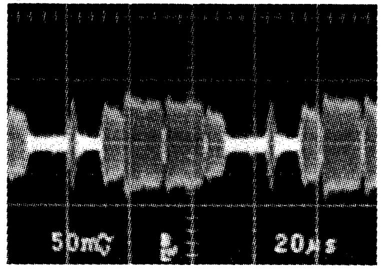
1-635-126-11(1)
EVO-9800P

HK-5 (1/3)

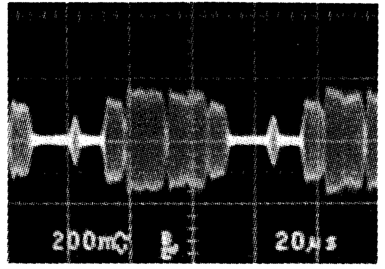
① CN911-2 EE mode



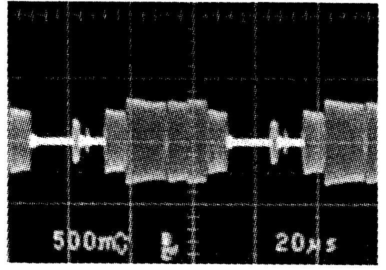
② IC602-1 PB mode



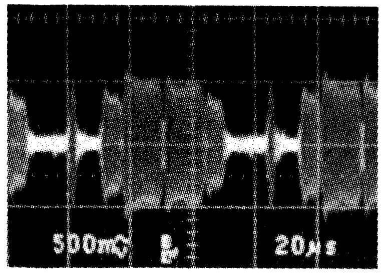
③ IC602-12 PB mode



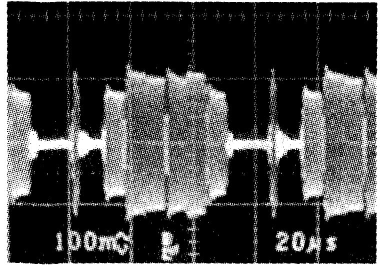
④ IC601-11 EE mode



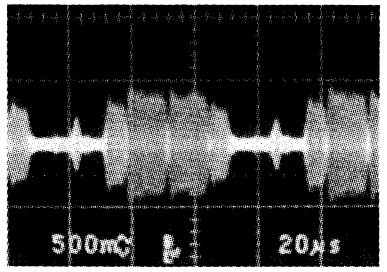
IC601-11 PB mode



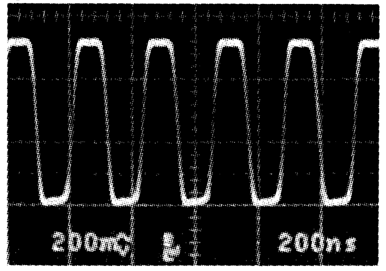
⑤ Q604-E EE mode



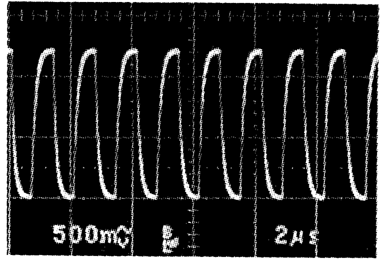
⑥ TP602 PB mode



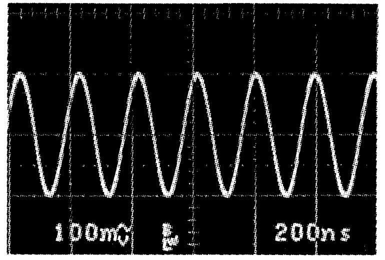
⑦ IC602-14 EE mode 4.43MHz



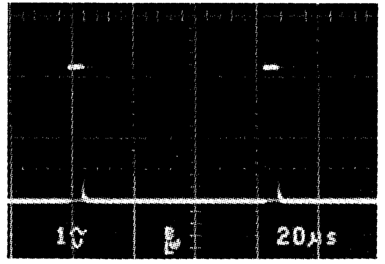
⑧ IC602-33 EE mode 732kHz



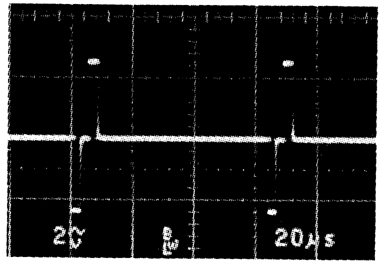
⑨ IC602-36 EE mode 5.16MHz



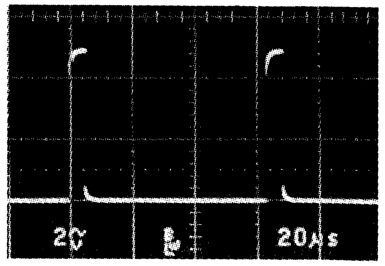
⑩ CN102-13 EE mode



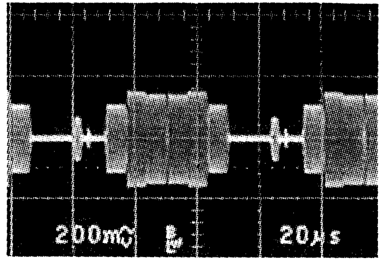
⑪ IC603-46 EE mode



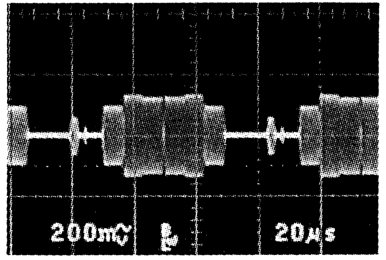
⑫ IC603-44 EE mode



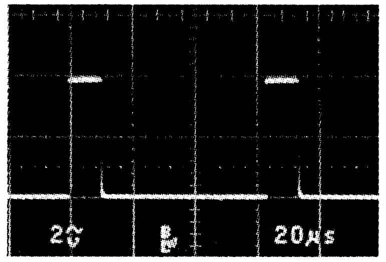
⑬ IC601 EE mode



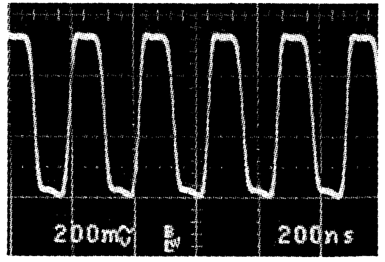
⑭ IC801-5 EE mode



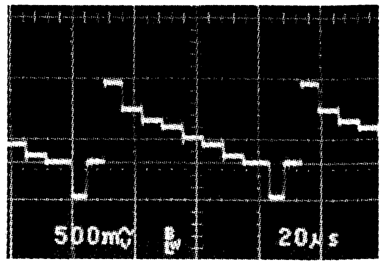
⑮ IC801-15 EE mode 15.625kHz



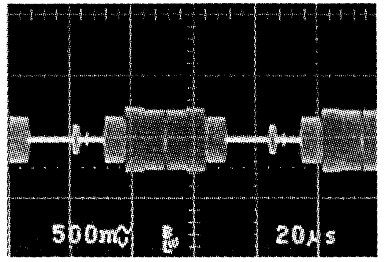
⑯ IC801-22 PB mode



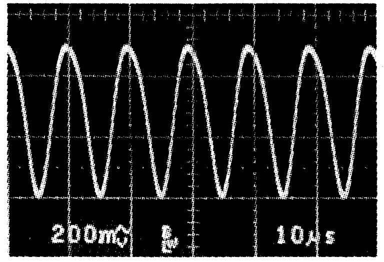
⑰ CN912-1 EE mode



⑱ TP801 EE mode



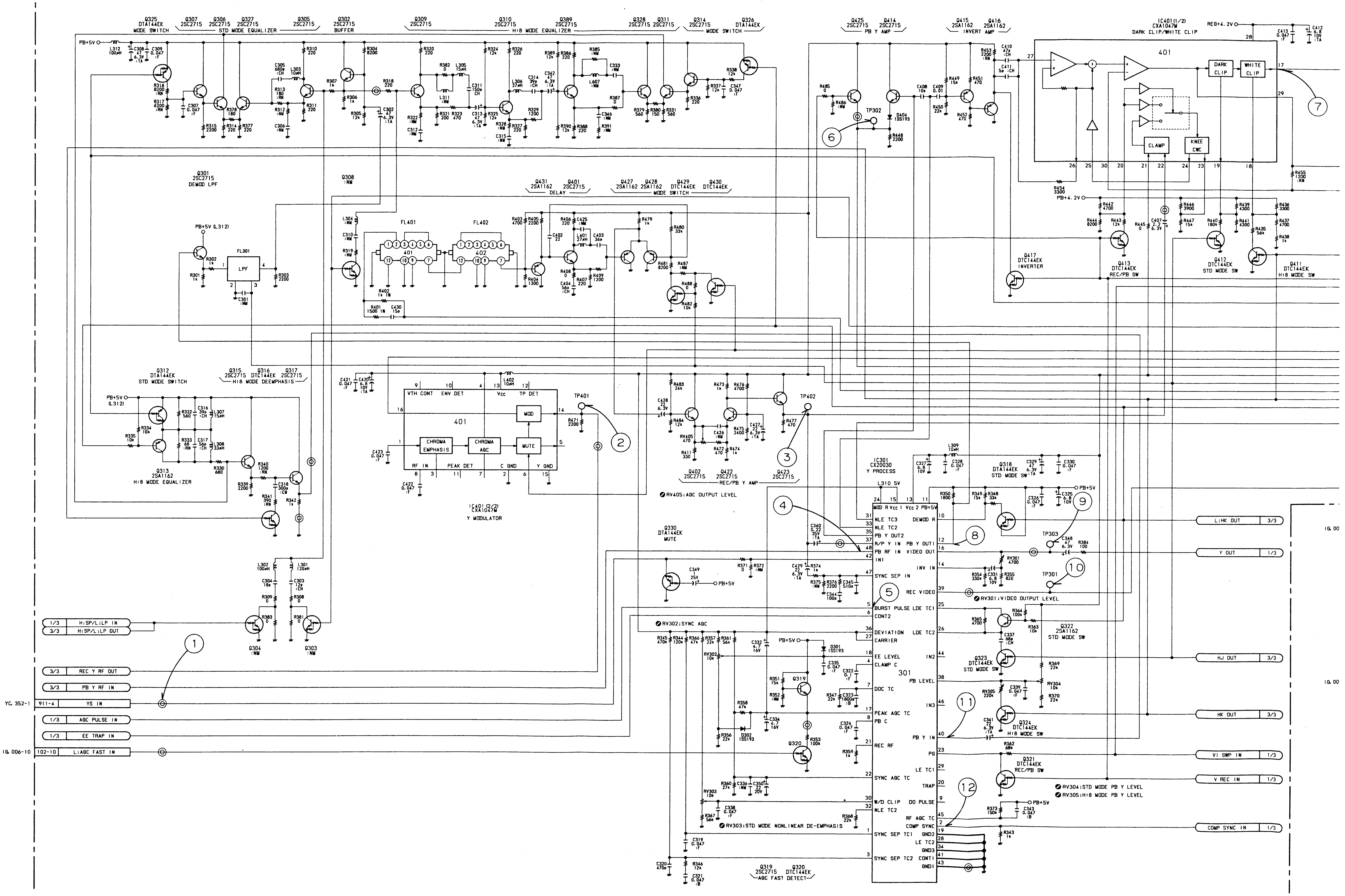
⑲ CN101-5 EE mode

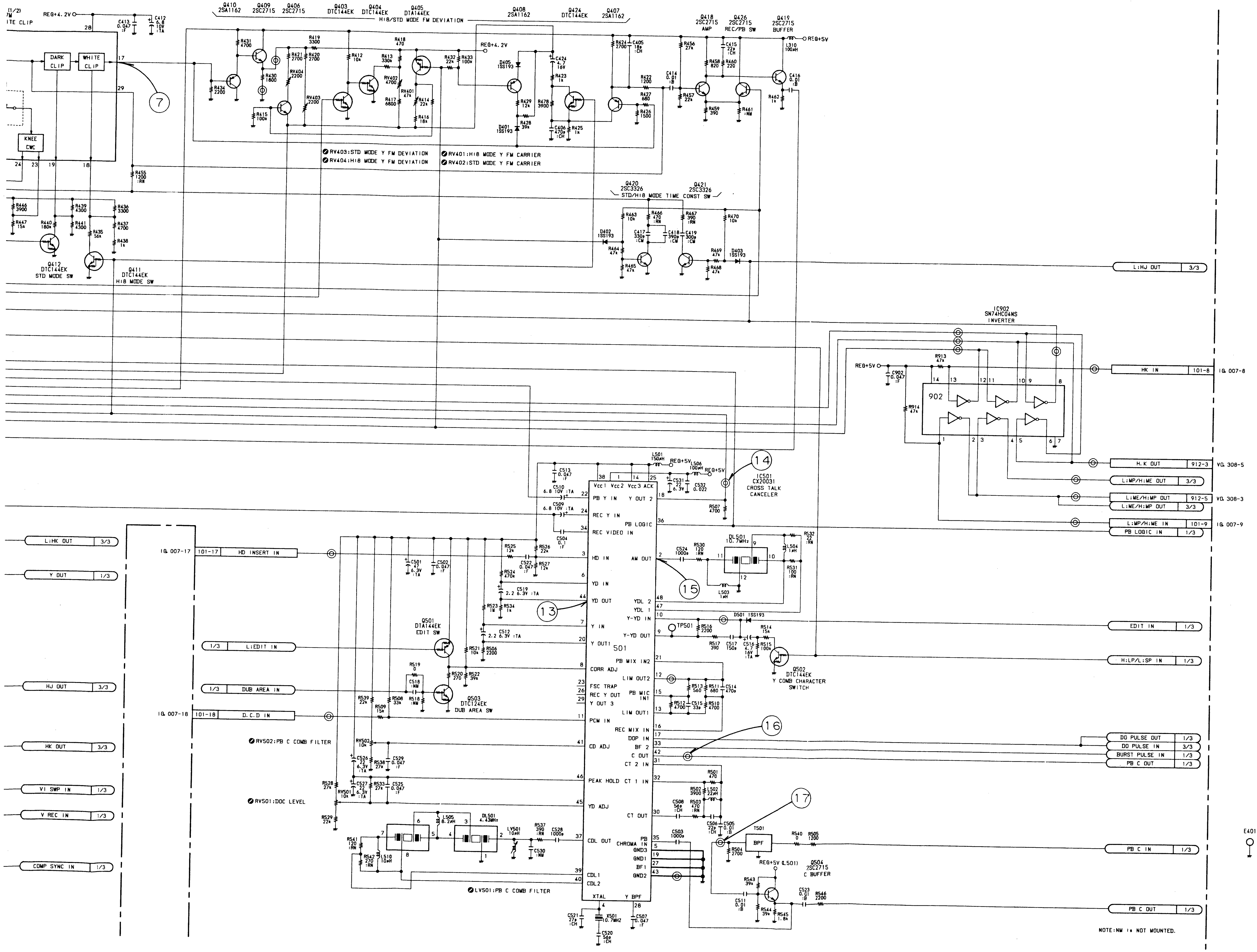


Measurement Condition

- Input Signal : Color Bars
- Cassette Tape : Alignment tape WR5-8CSE (Color Bars Signal)

-5 (2/3) ; Y PROCESS


Q325 DTA144EK MODE SWITCH
Q307 2SC2715 Q306 2SC2715 Q327 2SC2715 STD MODE EQUALIZER
Q305 2SC2715
Q302 2SC2715 BUFFER
Q309 2SC2715 Q310 2SC2715 Q389 2SC2715 Hi8 MODE EQUALIZER
Q328 2SC2715 Q311 2SC2715
Q314 2SC2715 Q326 DTA144EK MODE SWITCH
PB+5V
Q301 2SC2715 DEMOD LPF
Q308 :NM
FL301 LPF
PB+5V (L312)
FL401 FL402 401 402
Q431 2SA1162 Q401 2SC2715 DELAY
Q427 2SA1162 Q428 2SA1162 Q429 DTC144EK Q430 DTC144EK MODE SWITCH
Q312 DTA144EK STD MODE SWITCH
Q315 2SC2715 Q316 DTC144EK Q317 2SC2715 Hi8 MODE DEEMPHASIS
Q313 2SA1162 Hi8 MODE EQUALIZER
VTH CONT ENV DET Vcc TP DET
401
MOD
CHROMA EMPHASIS
CHROMA AGC
MUTE
RF IN PEAK DET C GND Y GND
IC401 (2/2) CXA1047M Y MODULATOR
TP401 TP402
Q402 2SC2715 Q422 2SC2715 Q423 2SC2715 REC/PB Y AMP
RV405:AGC OUTPUT LEVEL
Q304 :NM Q303 :NM
Q330 DTA144EK MUTE
1/3 H:SP/L:LP IN
3/3 H:SP/L:LP OUT
3/3 REC Y RF OUT
3/3 PB Y RF IN
YC 352-1 911-4 YS IN
1/3 AGC PULSE IN
1/3 EE TRAP IN
IG 006-10 102-10 L:AGC FAST IN
Q425 2SC2715 Q414 2SC2715 PB Y AMP
Q415 2SA1162 Q416 2SA1162 INVERT AMP
TP302
IC401 (1/2) CXA1047M DARK CLIP/WHITE CLIP
REG+4.2V
401
DARK CLIP
WHITE CLIP
CLAMP
KNEE CWC
PB+4.2V
Q417 DTC144EK INVERTER
Q413 DTC144EK REC/PB SW
Q412 DTC144EK STD MODE SW
Q411 DTC144EK Hi8 MODE SW
IC301 CX20030 Y PROCESS
L310 5V
MOD R Vcc 1 Vcc 2 PB+5V
NLE TC3 DEMOD R
NLE TC2
PB Y OUT2
R/P Y IN PB Y OUT1
PB RF IN VIDEO OUT
IN1
SYNC SEP IN INV IN
REC VIDEO
BURST PULSE LDE TC1
CONT2
DEVIATION LDE TC2
CARRIER
EE LEVEL IN2
CLAMP C
301
PB LEVEL
DOC TC
IN3
PEAK AGC TC
PB C
PB Y IN
REC RF
PG
LE TC1
SYNC AGC TC
TRAP
W/D CLIP DO PULSE
NLE TC2
RF AGC TC
COMP SYNC
SYNC SEP TC1 GND2
LE TC2
GND3
SYNC SEP TC2 CONT1
GND1
Q318 DTC144EK STD MODE SW
TP303 TP301
RV301:VIDEO OUTPUT LEVEL
RV302:SYNC AGC
Q322 2SA1162 STD MODE SW
Q323 DTC144EK STD MODE SW
Q324 DTC144EK Hi8 MODE SW
Q321 DTC144EK REC/PB SW
RV304:STD MODE PB Y LEVEL
RV305:Hi8 MODE PB Y LEVEL
RV303:STD MODE NONLINEAR DE-EMPHASIS
Q319 2SC2715 Q320 DTC144EK AGC FAST DETECT
L:HK OUT 3/3
Y OUT 1/3
HJ OUT 3/3
HK OUT 3/3
VI SWP IN 1/3
V REC IN 1/3
COMP SYNC IN 1/3
IG 00
IG 00
① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩ ⑪ ⑫

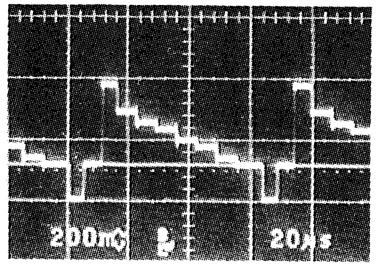

REG+4.2V
WHITE CLIP
DARK CLIP
KNEE CWC
Q410 2SA1162
Q409 2SC2715
Q406 2SC2715
Q403 DTC144EK
Q404 DTC144EK
Q405 DTA144EK
H18/STD MODE FM DEVIATION
Q408 2SA1162
Q424 DTC144EK
Q407 2SA1162
Q418 2SC2715 AMP
Q426 2SC2715 REC/PB SW
Q419 2SC2715 BUFFER
REG+5V
RV403:STD MODE Y FM DEVIATION
RV404:H18 MODE Y FM DEVIATION
RV401:H18 MODE Y FM CARRIER
RV402:STD MODE Y FM CARRIER
Q420 2SC3326
Q421 2SC3326
STD/H18 MODE TIME CONST SW
Q412 DTC144EK STD MODE SW
Q411 DTC144EK H18 MODE SW
L:HJ OUT 3/3
IC902 SN74HC04NS INVERTER
902
HK IN 101-8
IG 007-8
H.K OUT 912-3
VG 308-5
L:MP/H:ME OUT 3/3
L:ME/H:MP OUT 912-5
VG 308-3
L:ME/H:MP OUT 3/3
L:MP/H:ME IN 101-9
IG 007-9
PB LOGIC IN 1/3
IC501 CX20031 CROSS TALK CANCELER
501
L:HK OUT 3/3
Y OUT 1/3
IG 007-17 101-17 HD INSERT IN
1/3 L:EDIT IN
HJ OUT 3/3
1/3 DUB AREA IN
IG 007-18 101-18 D.C.D IN
HK OUT 3/3
VI SWP IN 1/3
V REC IN 1/3
COMP SYNC IN 1/3
Q501 DTA144EK EDIT SW
Q503 DTC124EK DUB AREA SW
Q502 DTC144EK Y COMB CHARACTER SWITCH
RV502:PB C COMB FILTER
RV501:DOC LEVEL
LV501:PB C COMB FILTER
EDIT IN 1/3
H:LP/L:SP IN 1/3
DO PULSE OUT 1/3
DO PULSE IN 3/3
BURST PULSE IN 1/3
PB C OUT 1/3
PB C IN 1/3
PB C OUT 1/3
Q504 2SC2715 C BUFFER
BPF
E401
7
13
14
15
16
17

NOTE:NM is NOT MOUNTED.

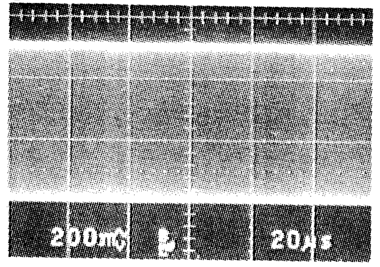
HK-5(2/3)

1-635-126-11(1)
EVO-9800P

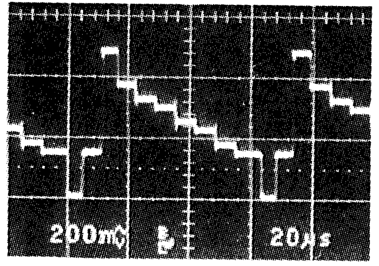
① CN911-4 EE mode



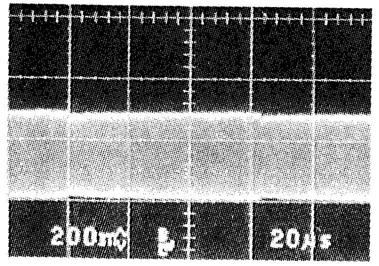
② TP401 EE mode



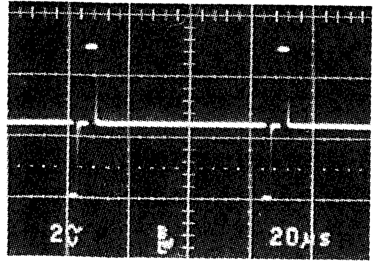
③ TP402 EE mode



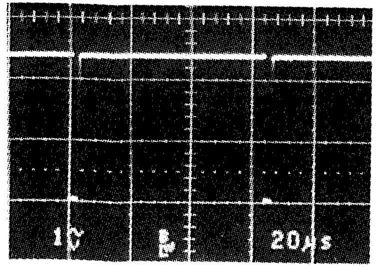
④ IC301-48 EE mode



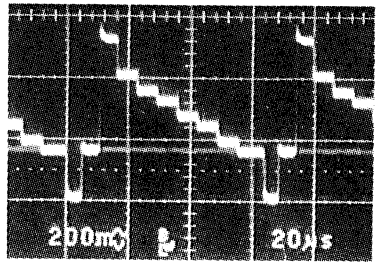
⑤ IC301-5 EE mode



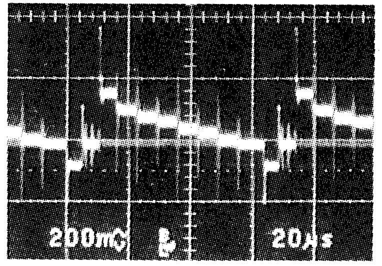
IC301-5 PB mode



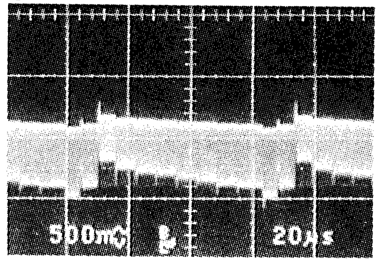
⑥ TP302 PB mode



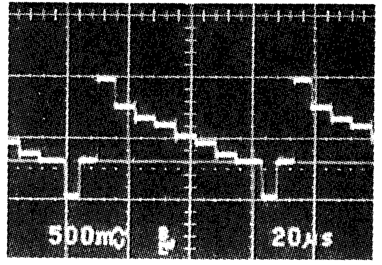
⑦ IC401-17 EE mode



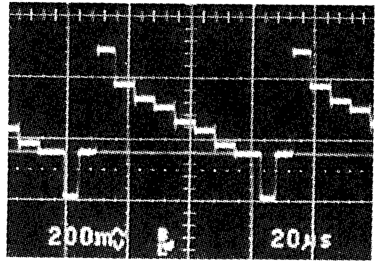
⑧ IC301-12 PB mode



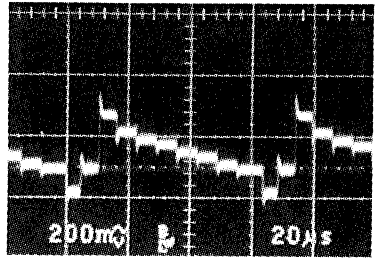
⑨ TP303 EE mode



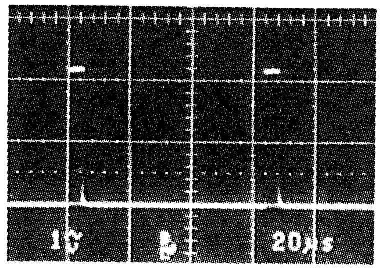
⑩ TP301 EE mode



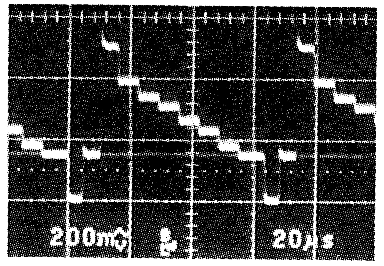
⑪ IC301-40 PB mode



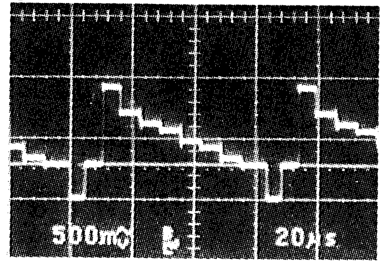
⑫ IC301-2 EE mode



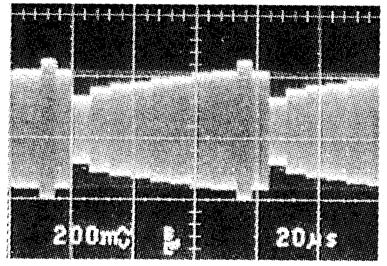
⑬ IC501-44 PB mode



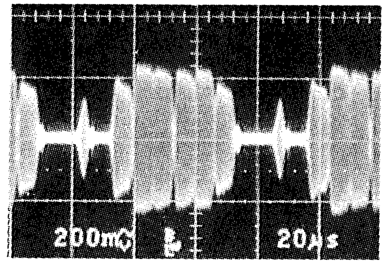
⑭ IC501-18 EE mode



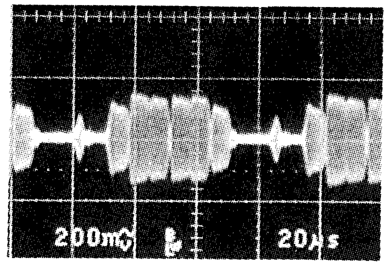
⑮ IC501-2 EE mode



⑯ IC501-42 PB mode



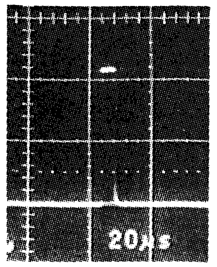
⑰ T501 PB mode



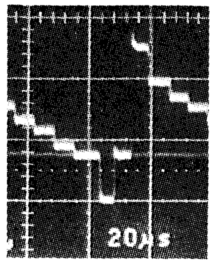
Measurement Condition

- Input Signal : Color Bars
- Cassette Tape : Alignment tape WR5-8CSE
  (Color Bars Signal)

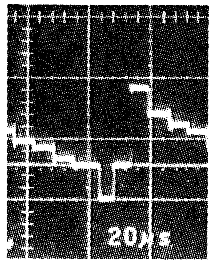
ode



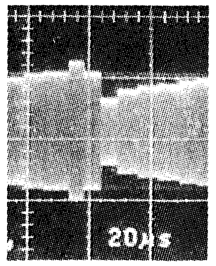
mode



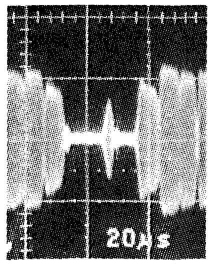
mode



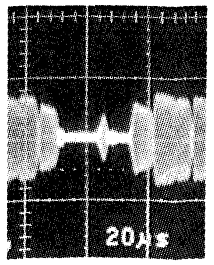
ode



mode



e



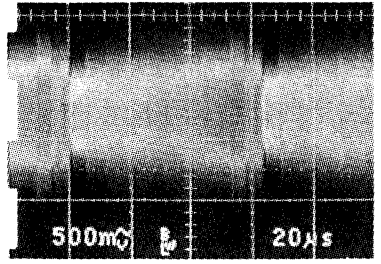
Measurement Condition

- Input Signal : Color Bars
- Cassette Tape : Alignment tape WR5-8CSE
  (Color Bars Signal)

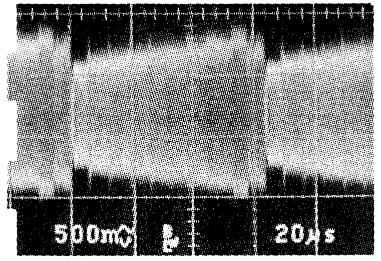
HK-5 (3/3); Y/C/AFM MIX

HK-5 (3/3)

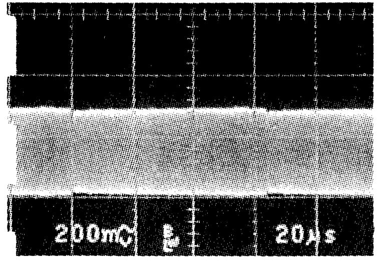
CN102-17 PB mode



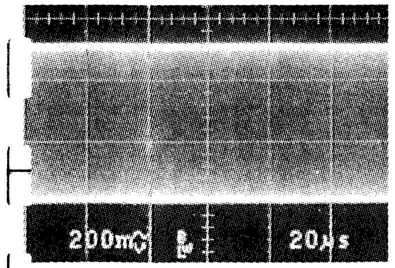
② TP101 PB mode



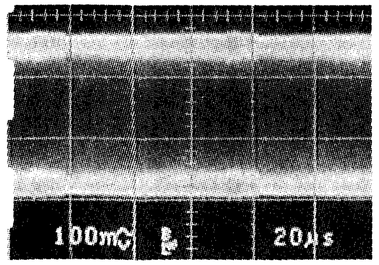
③ TP102 PB mode



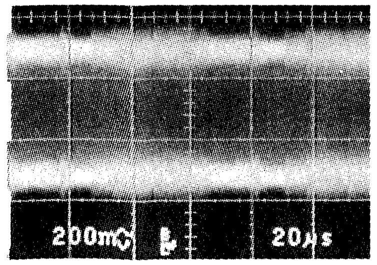
④ Q701-B EE mode



⑤ Q211-E EE mode

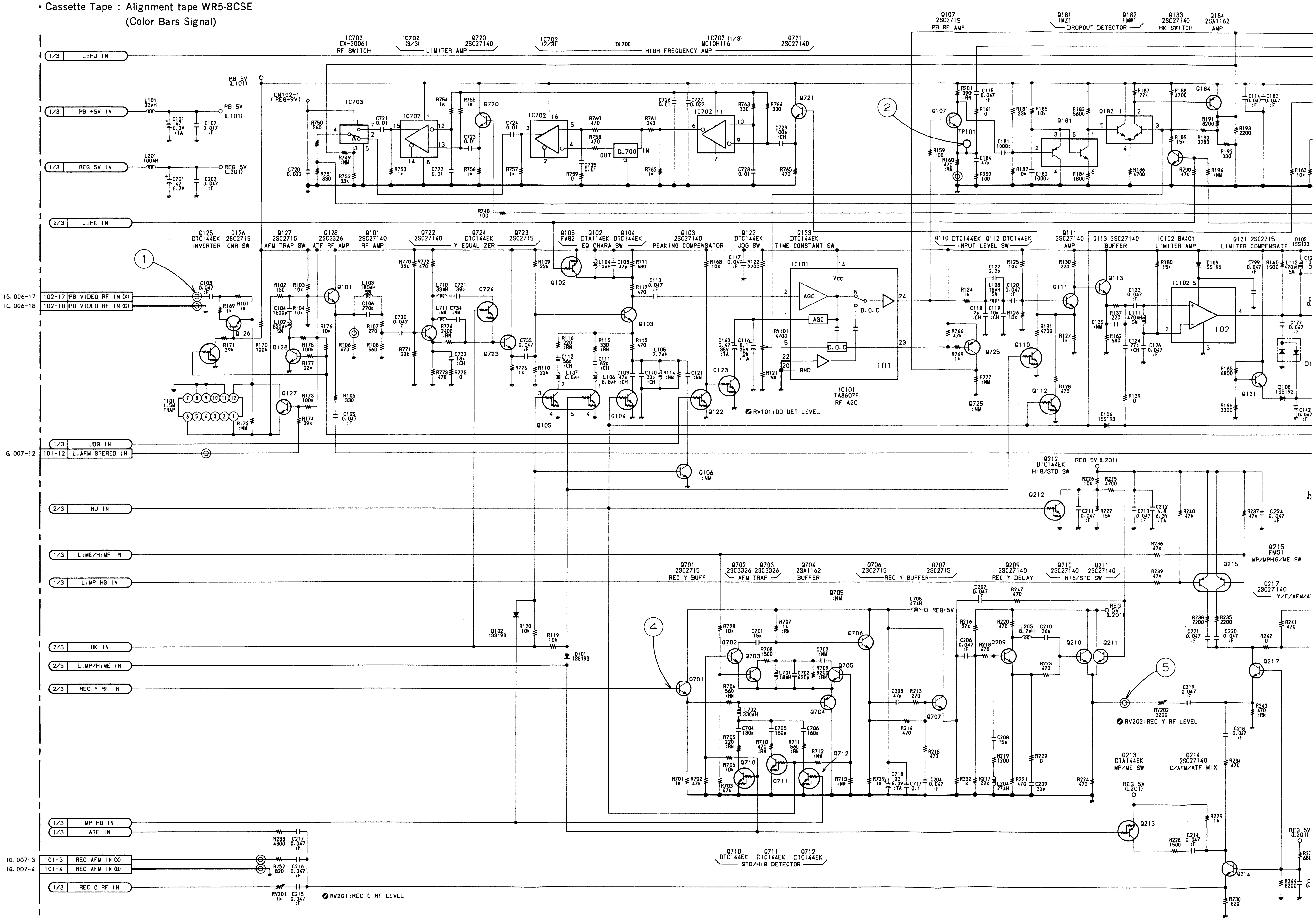


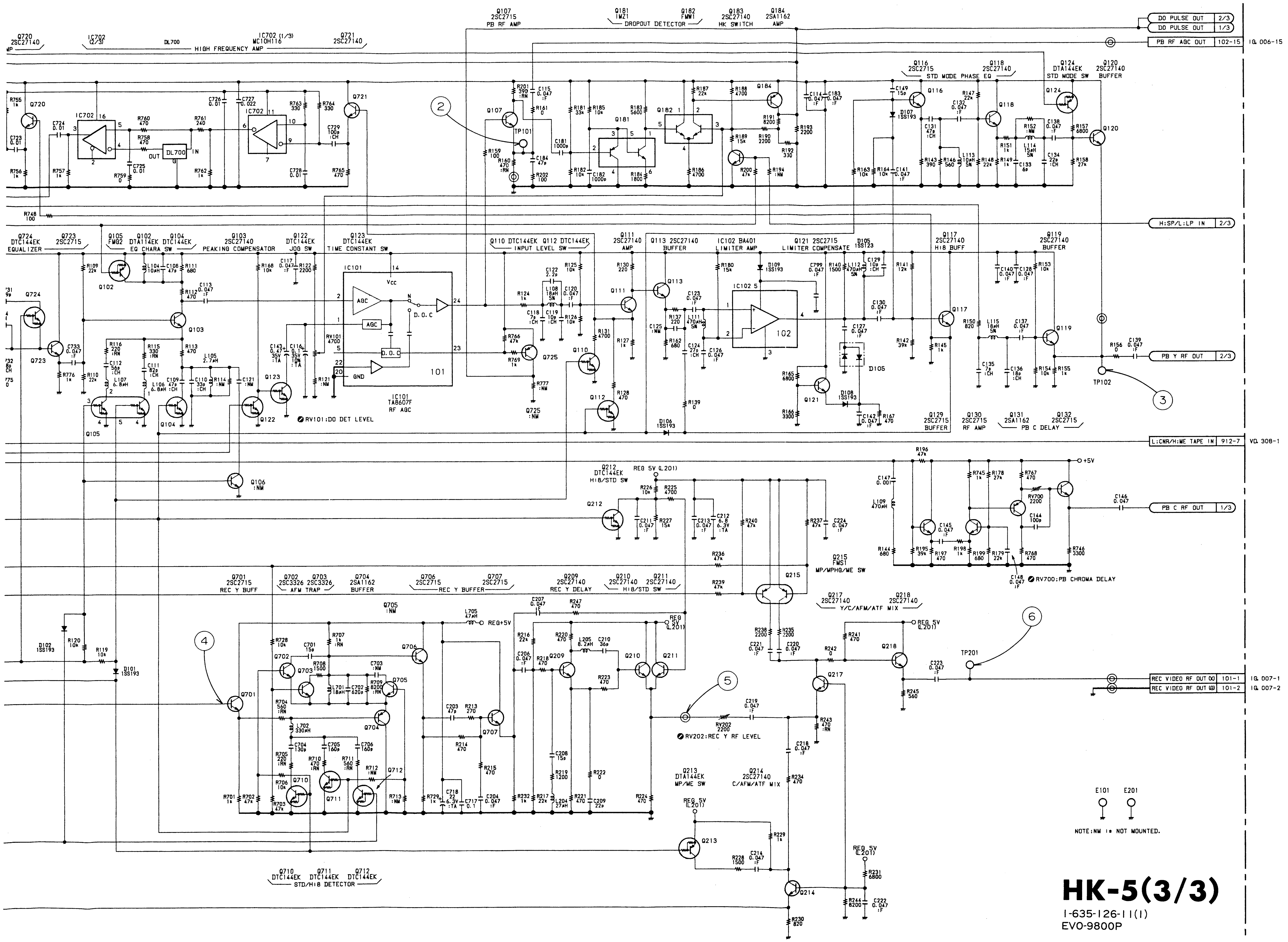
⑥ TP201 EE mode



Measurement Condition

- Input Signal : Color Bars
- Cassette Tape : Alignment tape WR5-8CSE (Color Bars Signal)


IC703 CX-20061 RF SWITCH
IC702 (3/3) Q720 2SC27140 LIMITER AMP
IC702 (2/3) DL700 IC702 (1/3) MC10H116 Q721 2SC27140 HIGH FREQUENCY AMP
Q107 2SC2715 PB RF AMP
Q181 IMZ1 Q182 FMW1 DROPOUT DETECTOR
Q183 2SC27140 HK SWITCH
Q184 2SA1162 AMP
1/3 L:HJ IN
1/3 PB +5V IN
1/3 REG 5V IN
2/3 L:HK IN
PB 5V (L101)
REG 5V (L201)
CN102-1 (REG+9V)
Q125 DTC144EK INVERTER
Q126 2SC2715 CNR SW
Q127 2SC2715 AFM TRAP SW
Q128 2SC3326 ATF RF AMP
Q101 2SC27140 RF AMP
Q722 2SC27140 Q724 DTC144EK Q723 2SC2715 Y EQUALIZER
Q105 FMG2 Q102 DTA114EK Q104 DTC144EK EQ CHARA SW
Q103 2SC27140 PEAKING COMPENSATOR
Q122 DTC144EK JOG SW
Q123 DTC144EK TIME CONSTANT SW
Q110 DTC144EK Q112 DTC144EK INPUT LEVEL SW
Q111 2SC27140 AMP
Q113 2SC27140 BUFFER
IC102 BA401 LIMITER AMP
Q121 2SC2715 LIMITER COMPENSATE
IG 006-17 102-17 PB VIDEO RF IN (X)
IG 006-18 102-18 PB VIDEO RF IN (G)
T101 1.5M TRAP
IC101 TA8607F RF AGC
AGC
D.O.C
RV101:DO DET LEVEL
1/3 JOG IN
IG 007-12 101-12 L:AFM STEREO IN
Q106 :NM
Q212 DTC144EK HI8/STD SW
REG 5V (L201)
2/3 HJ IN
1/3 L:ME/H:MP IN
1/3 L:MP HG IN
Q215 FMS1 MP/MPHG/ME SW
Q217 2SC27140 Y/C/AFM/A
Q701 2SC2715 REC Y BUFF
Q702 2SC3326 Q703 2SC3326 AFM TRAP
Q704 2SA1162 BUFFER
Q706 2SC2715 Q707 2SC2715 REC Y BUFFER
Q209 2SC27140 REC Y DELAY
Q210 2SC27140 Q211 2SC27140 HI8/STD SW
Q705 :NM
REG+5V
2/3 HK IN
2/3 L:MP/H:ME IN
2/3 REC Y RF IN
RV202:REC Y RF LEVEL
Q213 DTA144EK MP/ME SW
Q214 2SC27140 C/AFM/ATF MIX
1/3 MP HG IN
1/3 ATF IN
IG 007-3 101-3 REC AFM IN (X)
IG 007-4 101-4 REC AFM IN (G)
1/3 REC C RF IN
RV201:REC C RF LEVEL
Q710 DTC144EK Q711 DTC144EK Q712 DTC144EK STD/HI8 DETECTOR
①
②
④
⑤
TP101


Q720 2SC2714O
IC702 (2/3)
DL700
HIGH FREQUENCY AMP
IC702 (1/3) MC10H116
Q721 2SC2714O
Q107 2SC2715 PB RF AMP
Q181 IMZ1
Q182 FMW1
DROPOUT DETECTOR
Q183 2SC2714O HK SWITCH
Q184 2SA1162 AMP
DO PULSE OUT 2/3
DO PULSE OUT 1/3
PB RF AGC OUT 102-15
IQ 006-15
Q116 2SC2715
Q118 2SC2714O
STD MODE PHASE EQ
Q124 DTA144EK STD MODE SW
Q120 2SC2714O BUFFER
TP101
H:SP/L:LP IN 2/3
Q724 DTC144EK EQUALIZER
Q723 2SC2715
Q105 FMG2
Q102 DTA114EK
Q104 DTC144EK
EQ CHARA SW
Q103 2SC2714O PEAKING COMPENSATOR
Q122 DTC144EK JOG SW
Q123 DTC144EK TIME CONSTANT SW
IC101 TA8607F RF AGC
AGC
D.O.C
Vcc
GND
RV101:DO DET LEVEL
Q110 DTC144EK Q112 DTC144EK INPUT LEVEL SW
Q111 2SC2714O AMP
Q113 2SC2714O BUFFER
IC102 BA401 LIMITER AMP
Q121 2SC2715 LIMITER COMPENSATE
D105 1SS123
Q117 2SC2714O H18 BUFF
Q119 2SC2714O BUFFER
PB Y RF OUT 2/3
TP102
Q129 2SC2715 BUFFER
Q130 2SC2715 RF AMP
Q131 2SA1162
Q132 2SC2715
PB C DELAY
L:CNR/H:ME TAPE IN 912-7
VD 308-1
Q106 :NM
Q212 DTC144EK H18/STD SW
REG 5V (L201)
+5V
PB C RF OUT 1/3
RV700:PB CHROMA DELAY
Q215 FMS1 MP/MPHG/ME SW
Q701 2SC2715 REC Y BUFF
Q702 2SC3326
Q703 2SC3326
AFM TRAP
Q704 2SA1162 BUFFER
Q706 2SC2715
Q707 2SC2715
REC Y BUFFER
Q209 2SC2714O REC Y DELAY
Q210 2SC2714O
Q211 2SC2714O
H18/STD SW
Q217 2SC2714O
Q218 2SC2714O
Y/C/AFM/ATF MIX
Q705 :NM
REG+5V
TP201
REC VIDEO RF OUT (1) 101-1
REC VIDEO RF OUT (2) 101-2
IQ 007-1
IQ 007-2
RV202:REC Y RF LEVEL
Q213 DTA144EK MP/ME SW
Q214 2SC2714O C/AFM/ATF MIX
Q710 DTC144EK
Q711 DTC144EK
Q712 DTC144EK
STD/H18 DETECTOR
D102 1SS193
D101 1SS193
E101
E201
②
③
④
⑤
⑥

NOTE:NM is NOT MOUNTED.

HK-5(3/3)

1-635-126-11(1)
EVO-9800P

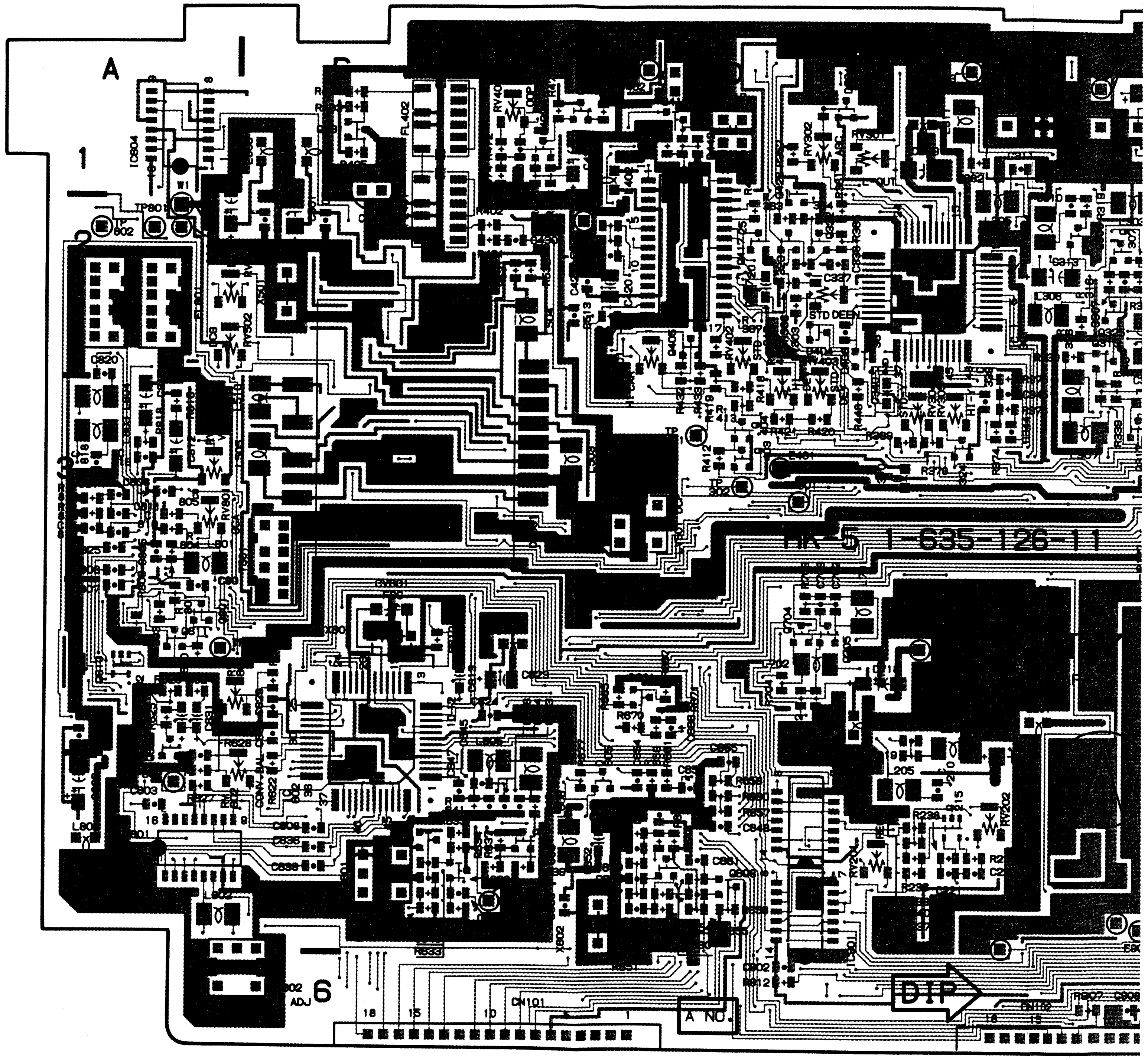
HK-5 ; Y/C VIDEO PROCESS

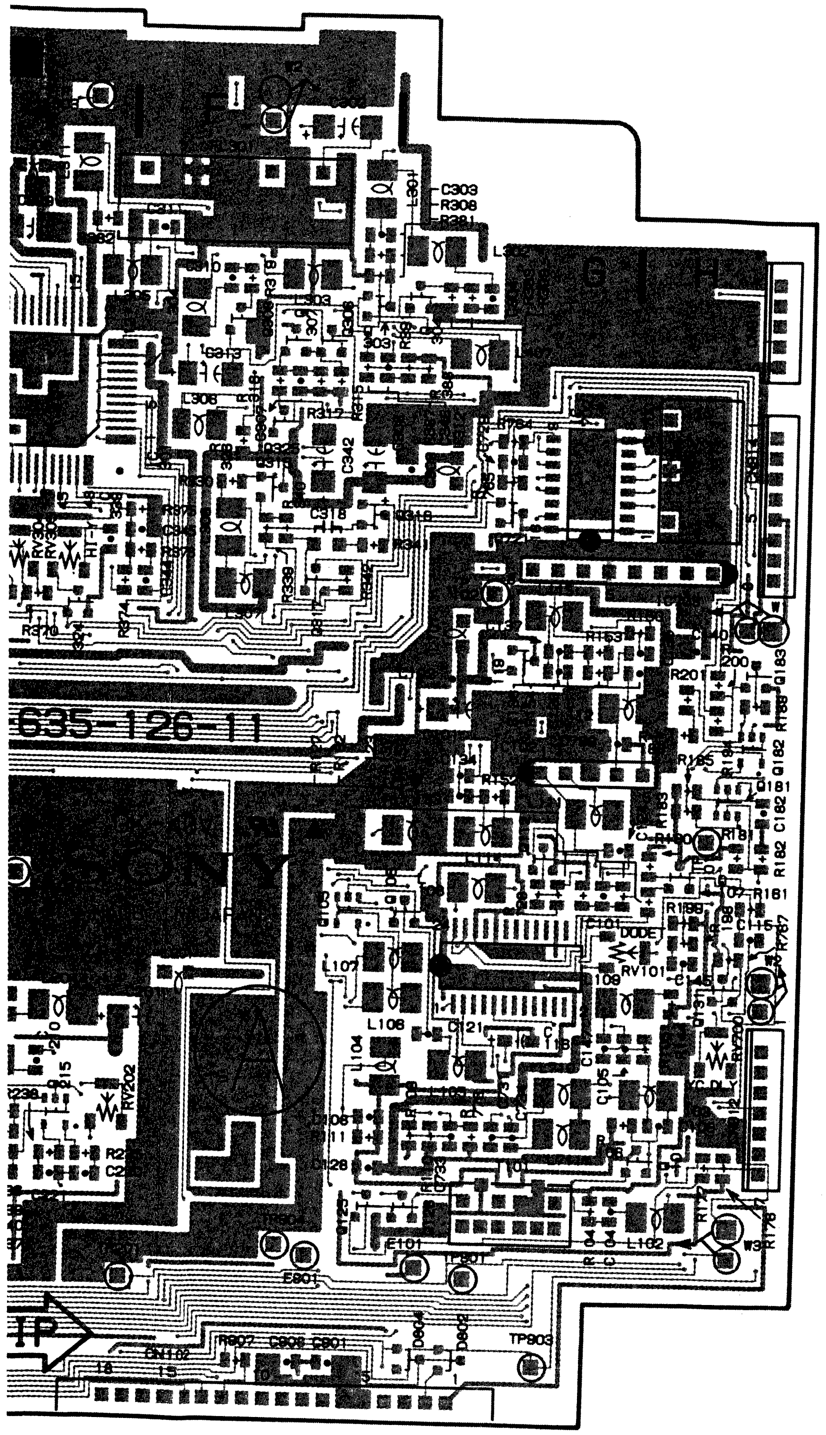
HK-5(1-635-126-11)A SIDE

CF601	A-4
CF851	G-4
CN101	C-6
CN102	F-6
CN911	H-2
CN912	H-5
CN914	H-2
CV601	B-4
D301	E-1
D404	E-2
D601	D-4
D605	C-5
D802	G-6
D804	G-6
DL501	C-3
DL700	H-2
E101	G-5
E201	E-4
E401	D-3
E601	B-5
E901	F-5
FL301	F-1
FL401	B-2
FL402	B-1
FL801	A-2
FL802	A-2
IC101	G-4
IC102	G-3
IC301	F-2
IC401	D-1
IC601	A-5
IC602	B-5
IC604	A-1
IC702	G-2
IC703	H-3
IC901	E-5
IC902	E-5
LV501	D-3
Q101	H-5
Q105	F-4
Q107	H-4
Q112	G-4
Q119	G-3
Q125	F-5
Q126	G-5
Q131	H-4
Q181	H-3
Q182	H-3
Q215	E-5
Q306	F-2
Q307	F-2
Q315	F-2
Q316	G-2
Q317	F-3
Q322	E-2
Q323	D-2
Q324	E-3
Q325	F-2
Q403	D-3
Q404	D-3
Q405	D-2
Q413	D-1
Q414	E-2
Q417	D-2
Q422	C-1
Q423	C-1
Q426	D-1
Q431	B-1
Q603	B-5
Q604	C-5
Q605	C-5
Q607	D-5
Q608	D-5
Q610	A-4
Q611	A-4
Q704	D-4
Q721	G-3
Q801	A-4
RV101	H-4
RV201	E-5
RV202	F-5
RV301	E-1
RV302	E-1
RV303	D-2
RV304	E-3
RV305	E-3
RV401	D-2
RV402	D-2
RV403	E-2
RV404	D-2
RV405	C-1
RV501	B-2
RV502	B-2
RV700	H-5
RV801	A-3
RV802	A-3
T101	G-5
T501	B-3
T601	B-5
T602	B-6
TP101	H-4
TP102	G-3
TP201	F-5
TP301	D-3
TP302	D-3
TP303	E-1
TP401	D-3
TP402	D-1
TP501	C-2
TP601	A-4
TP602	A-5
TP801	A-1
TP802	A-2
TP901	G-5
TP903	G-6
TP904	F-5
X501	B-2
X601	B-4
X602	C-5

HK-5(1-635-126-11)B SIDE

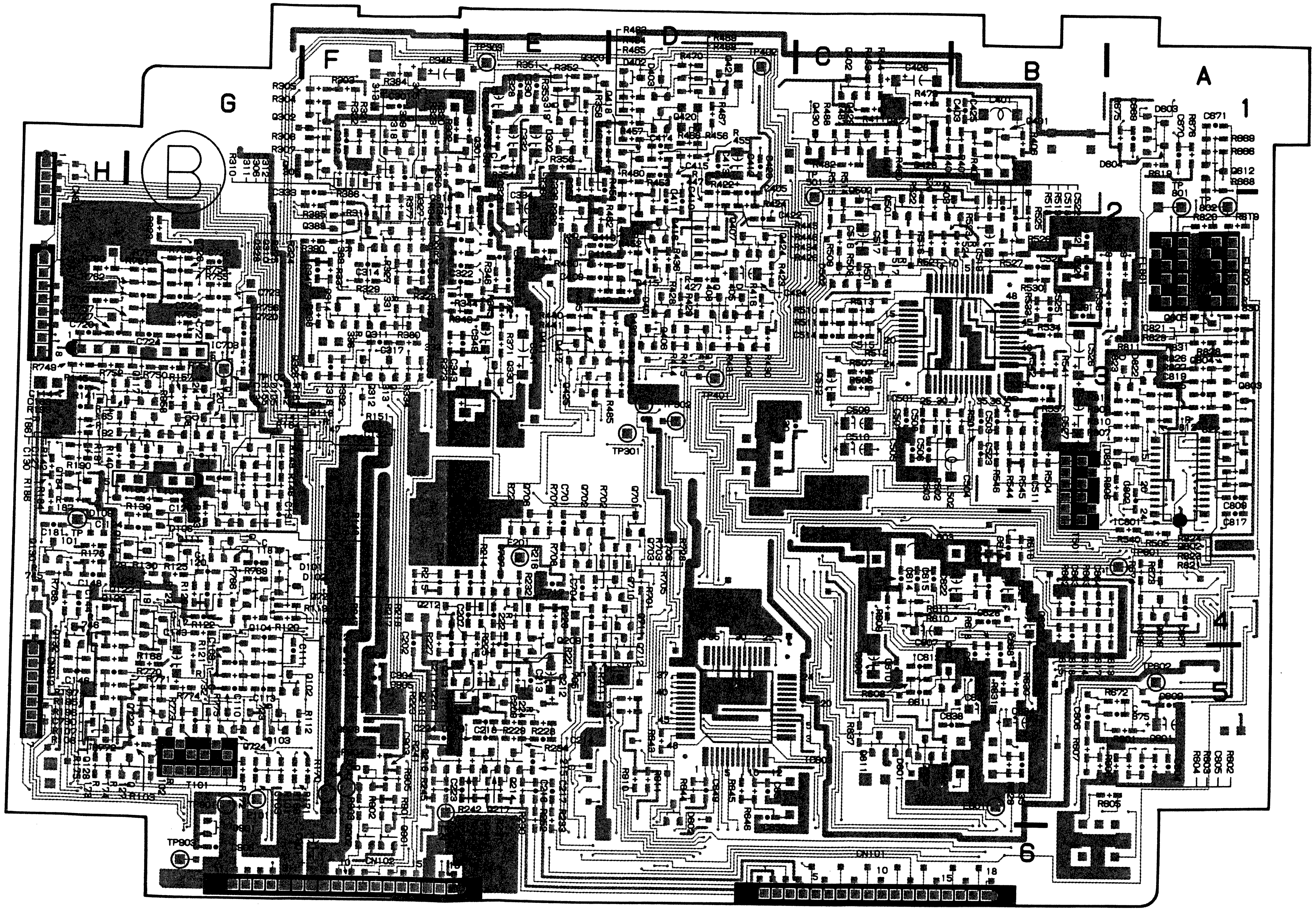
D101	F-4
D102	F-4
D105	G-3
D106	G-4
D107	F-4
D108	G-3
D109	H-4
D302	E-1
D401	D-2
D402	D-1
D403	D-1
D405	D-2
D501	C-2
D602	D-5
D603	A-1
D604	A-1
D801	C-5
D821	A-3
D822	A-3
D823	A-3
D901	G-6
IC501	C-3
IC603	C-5
IC801	A-4
Q102	F-5
Q103	G-5
Q104	G-4
Q110	G-4
Q111	G-4
Q113	H-4
Q116	F-4
Q117	G-3
Q118	F-3
Q120	G-3
Q121	H-3
Q122	G-4
Q123	G-4
Q124	G-3
Q127	G-5
Q128	H-5
Q129	H-4
Q130	H-4
Q132	H-5
Q184	H-3
Q209	E-4
Q210	F-5
Q211	F-5
Q212	F-4
Q213	E-5
Q214	E-5
Q217	E-5
Q218	F-5
Q301	E-1
Q302	G-1
Q305	G-1
Q309	F-1
Q310	G-2
Q311	F-3
Q312	F-3
Q313	F-3
Q314	F-2
Q318	F-2
Q319	E-1
Q320	E-1
Q321	E-2
Q326	G-3
Q327	F-2
Q328	G-2
Q330	E-3
Q389	F-2
Q401	B-1
Q402	C-1
Q406	D-3
Q407	D-2
Q408	D-2
Q409	D-3
Q410	D-3
Q411	E-3
Q412	E-3
Q415	D-2
Q416	D-2
Q418	D-1
Q419	D-2
Q420	D-1
Q421	D-1
Q424	D-2
Q425	E-3
Q427	C-1
Q428	C-1
Q429	C-1
Q430	C-1
Q501	C-2
Q502	C-1
Q503	C-2
Q504	B-3
Q601	B-5
Q606	C-5
Q609	A-4
Q612	A-1
Q701	D-3
Q702	E-3
Q703	D-4
Q706	E-3
Q707	E-4
Q710	D-4
Q711	D-4
Q712	D-5
Q720	G-2
Q722	G-5
Q723	G-5
Q724	G-5
Q725	F-4
Q802	A-4
Q803	A-3
Q804	A-3
Q805	A-2
Q811	C-5
Q901	F-6
Q902	F-6
Q903	F-5
Q904	F-5




C303
R308
635-126-11
SONY
CN102
TP903
E801
A

HK-5 -A SIDE-
1-635-126-11(1)
EVO-9800P

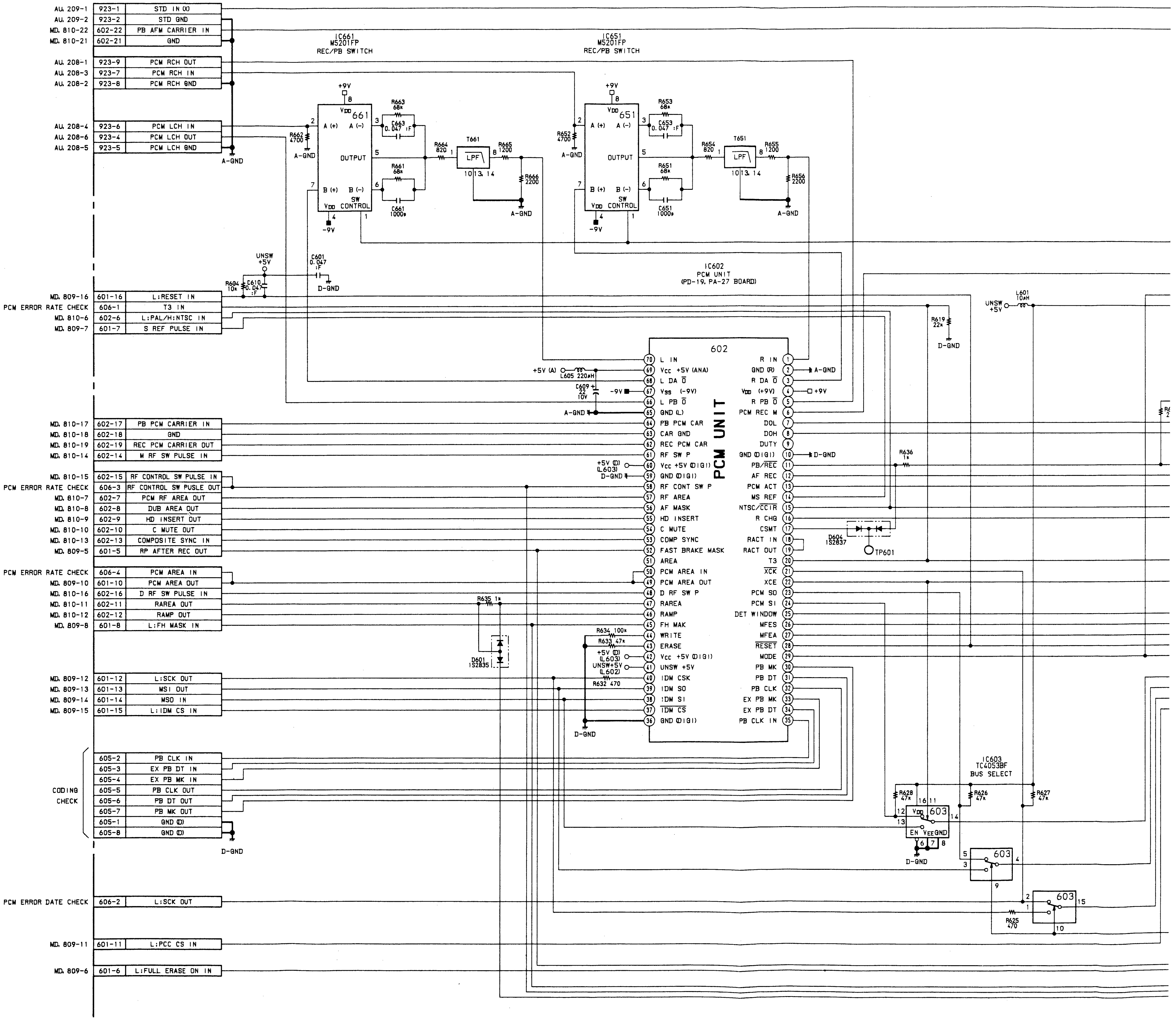
A Side is the same as COMPONENT Side

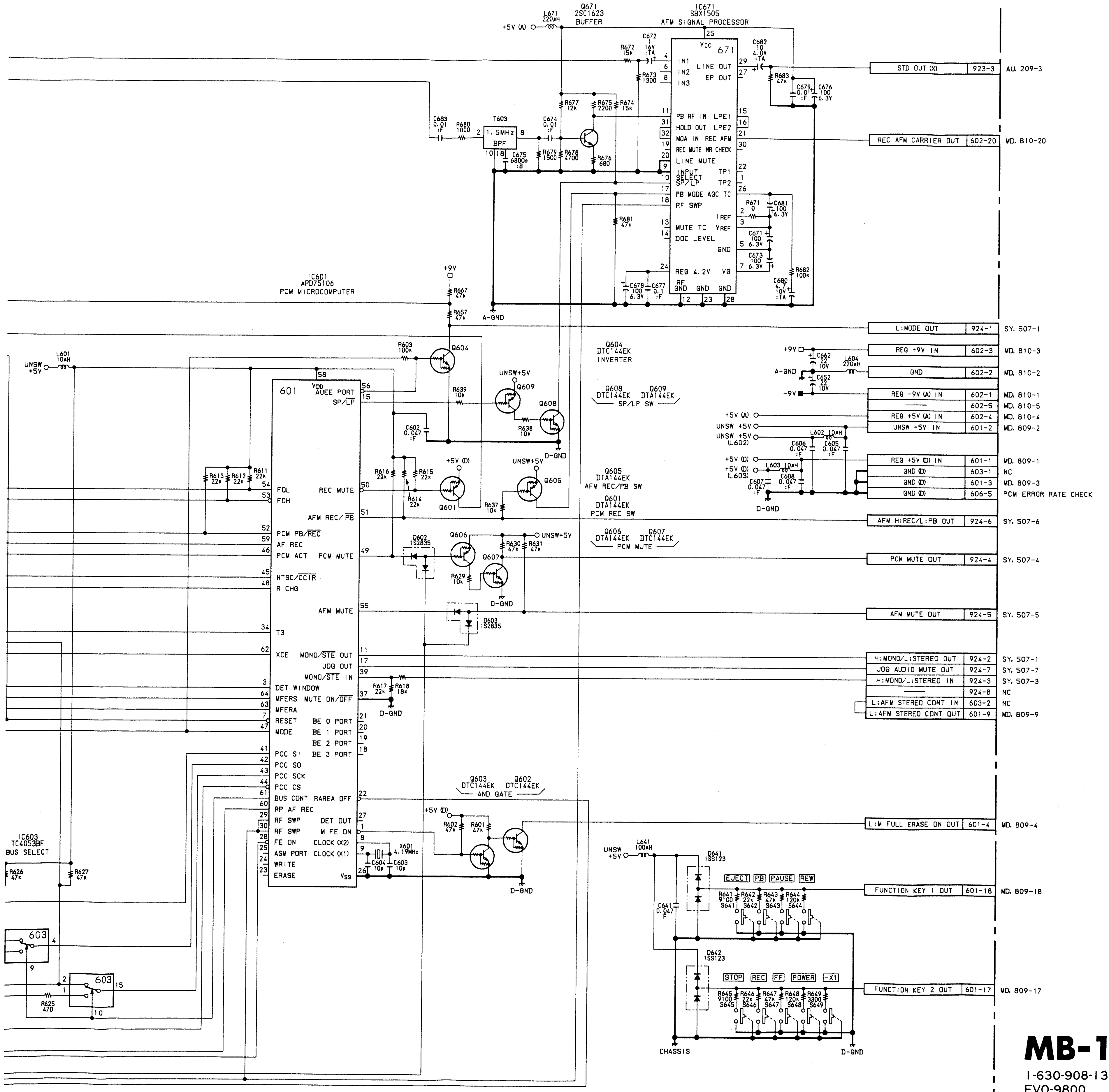

A
B
C
D
E
F
G
H
1
2
3
4
5
6
TP301
CN101
CN102
TP903
B

HK-5 -B SIDE-
1-635-126-11(1)
EVO-9800P

B Side is the same as SOLDER Side

3-19 ; PCM AUDIO


AU. 209-1 923-1 STD IN (X)
AU. 209-2 923-2 STD GND
MD. 810-22 602-22 PB AFM CARRIER IN
MD. 810-21 602-21 GND
AU. 208-1 923-9 PCM RCH OUT
AU. 208-3 923-7 PCM RCH IN
AU. 208-2 923-8 PCM RCH GND
AU. 208-4 923-6 PCM LCH IN
AU. 208-6 923-4 PCM LCH OUT
AU. 208-5 923-5 PCM LCH GND
A-GND
MD. 809-16 601-16 L:RESET IN
PCM ERROR RATE CHECK 606-1 T3 IN
MD. 810-6 602-6 L:PAL/H:NTSC IN
MD. 809-7 601-7 S REF PULSE IN
MD. 810-17 602-17 PB PCM CARRIER IN
MD. 810-18 602-18 GND
MD. 810-19 602-19 REC PCM CARRIER OUT
MD. 810-14 602-14 M RF SW PULSE IN
MD. 810-15 602-15 RF CONTROL SW PULSE IN
PCM ERROR RATE CHECK 606-3 RF CONTROL SW PUSLE OUT
MD. 810-7 602-7 PCM RF AREA OUT
MD. 810-8 602-8 DUB AREA OUT
MD. 810-9 602-9 HD INSERT OUT
MD. 810-10 602-10 C MUTE OUT
MD. 810-13 602-13 COMPOSITE SYNC IN
MD. 809-5 601-5 RP AFTER REC OUT
PCM ERROR RATE CHECK 606-4 PCM AREA IN
MD. 809-10 601-10 PCM AREA OUT
MD. 810-16 602-16 D RF SW PULSE IN
MD. 810-11 602-11 RAREA OUT
MD. 810-12 602-12 RAMP OUT
MD. 809-8 601-8 L:FH MASK IN
MD. 809-12 601-12 L:SCK OUT
MD. 809-13 601-13 MSI OUT
MD. 809-14 601-14 MSO IN
MD. 809-15 601-15 L:IDM CS IN
CODING CHECK
605-2 PB CLK IN
605-3 EX PB DT IN
605-4 EX PB MK IN
605-5 PB CLK OUT
605-6 PB DT OUT
605-7 PB MK OUT
605-1 GND (D)
605-8 GND (D)
D-GND
PCM ERROR DATE CHECK 606-2 L:SCK OUT
MD. 809-11 601-11 L:PCC CS IN
MD. 809-6 601-6 L:FULL ERASE ON IN
IC661 M5201FP REC/PB SWITCH
IC651 M5201FP REC/PB SWITCH
+9V
VDD 661
A (+) A (-)
OUTPUT
B (+) B (-)
VDD SW CONTROL
-9V
R662 4700
R663 68k
C663 0.047 :F
R661 68k
C661 1000p
R664 820
T661 LPF
10 13 14
R665 1200
R666 2200
VDD 651
R652 4700
R653 68k
C653 0.047 :F
R651 68k
C651 1000p
R654 820
T651 LPF
R655 1200
R656 2200
UNSW +5V
R604 10k
C610 0.047 :F
C601 0.047 :F
D-GND
IC602 PCM UNIT (PD-19, PA-27 BOARD)
602
PCM UNIT
70 L IN
69 Vcc +5V (ANA)
68 L DA O
67 Vss (-9V)
66 L PB O
65 GND (L)
64 PB PCM CAR
63 CAR GND
62 REC PCM CAR
61 RF SW P
60 Vcc +5V (DIGI)
59 GND (DIGI)
58 RF CONT SW P
57 RF AREA
56 AF MASK
55 HD INSERT
54 C MUTE
53 COMP SYNC
52 FAST BRAKE MASK
51 AREA
50 PCM AREA IN
49 PCM AREA OUT
48 D RF SW P
47 RAREA
46 RAMP
45 FH MAK
44 WRITE
43 ERASE
42 Vcc +5V (DIGI)
41 UNSW +5V
40 IDM CSK
39 IDM SO
38 IDM SI
37 IDM CS
36 GND (DIGI)
1 R IN
2 GND (R)
3 R DA O
4 VDD (+9V)
5 R PB O
6 PCM REC M
7 DOL
8 DOH
9 DUTY
10 GND (DIGI)
11 PB/REC
12 AF REC
13 PCM ACT
14 MS REF
15 NTSC/CCIR
16 R CHG
17 CSMT
18 RACT IN
19 RACT OUT
20 T3
21 XCK
22 XCE
23 PCM SO
24 PCM SI
25 DET WINDOW
26 MFES
27 MFEA
28 RESET
29 MODE
30 PB MK
31 PB DT
32 PB CLK
33 EX PB MK
34 EX PB DT
35 PB CLK IN
+5V (A)
L605 220μH
C609 22 10V
+5V (D) (L603)
UNSW+5V (L602)
R634 100k
R633 47k
R632 470
R635 1k
D601 1S2835
D604 1S2837
TP601
R636 1k
R619 22k
UNSW +5V
L601 10μH
IC603 TC4053BF BUS SELECT
R628 47k
R626 47k
R627 47k
603
EN VEE GND
R625 470


IC671 SBX1505 AFM SIGNAL PROCESSOR
Q671 2SC1623 BUFFER
L671 220μH
+5V (A)
T603 1.5MHz BPF
IC601 μPD75106 PCM MICROCOMPUTER
Q604 DTC144EK INVERTER
Q608 DTC144EK Q609 DTA144EK SP/LP SW
Q605 DTA144EK AFM REC/PB SW
Q601 DTA144EK PCM REC SW
Q606 DTA144EK Q607 DTC144EK PCM MUTE
Q603 DTC144EK Q602 DTC144EK AND GATE
D602 1S2835
D603 1S2835
X601 4.19MHz
IC603 TC4053BF BUS SELECT
D641 1SS123
D642 1SS123
EJECT PB PAUSE REW
STOP REC FF POWER -X1
A-GND
D-GND
CHASSIS
UNSW +5V
STD OUT (X) 923-3 AU. 209-3
REC AFM CARRIER OUT 602-20 MD. 810-20
L:MODE OUT 924-1 SY. 507-1
REG +9V IN 602-3 MD. 810-3
GND 602-2 MD. 810-2
REG -9V (A) IN 602-1 MD. 810-1
602-5 MD. 810-5
REG +5V (A) IN 602-4 MD. 810-4
UNSW +5V IN 601-2 MD. 809-2
REG +5V (D) IN 601-1 MD. 809-1
GND (D) 603-1 NC
GND (D) 601-3 MD. 809-3
GND (D) 606-5 PCM ERROR RATE CHECK
AFM H:REC/L:PB OUT 924-6 SY. 507-6
PCM MUTE OUT 924-4 SY. 507-4
AFM MUTE OUT 924-5 SY. 507-5
H:MONO/L:STEREO OUT 924-2 SY. 507-1
JOG AUDIO MUTE OUT 924-7 SY. 507-7
H:MONO/L:STEREO IN 924-3 SY. 507-3
924-8 NC
L:AFM STEREO CONT IN 603-2 NC
L:AFM STEREO CONT OUT 601-9 MD. 809-9
L:M FULL ERASE ON OUT 601-4 MD. 809-4
FUNCTION KEY 1 OUT 601-18 MD. 809-18
FUNCTION KEY 2 OUT 601-17 MD. 809-17

MB-19

1-630-908-13(1)
EVO-9800
EVO-9800P

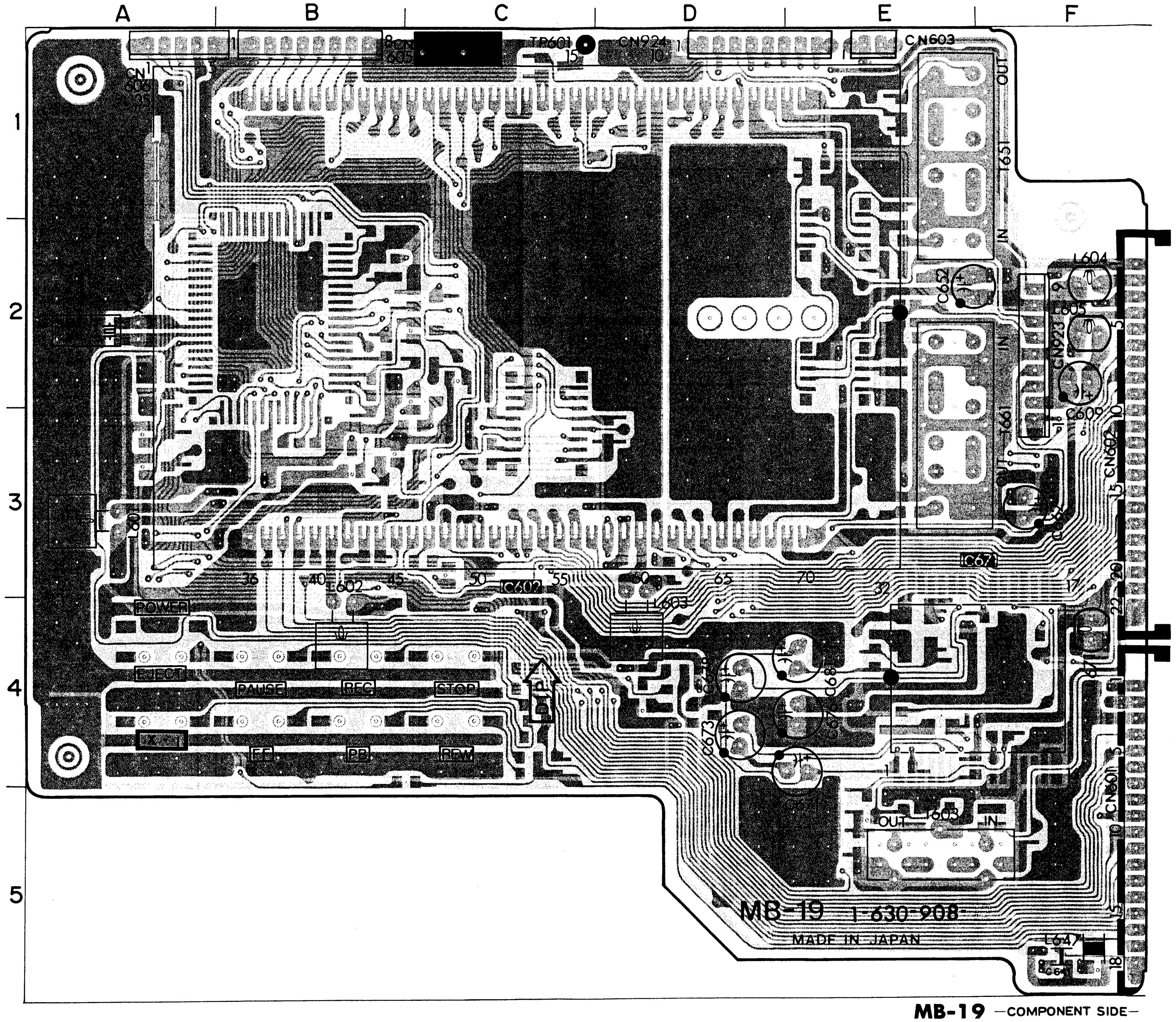
MB-19 ; PCM AUDIO

MB-19(1-630-908-13)C

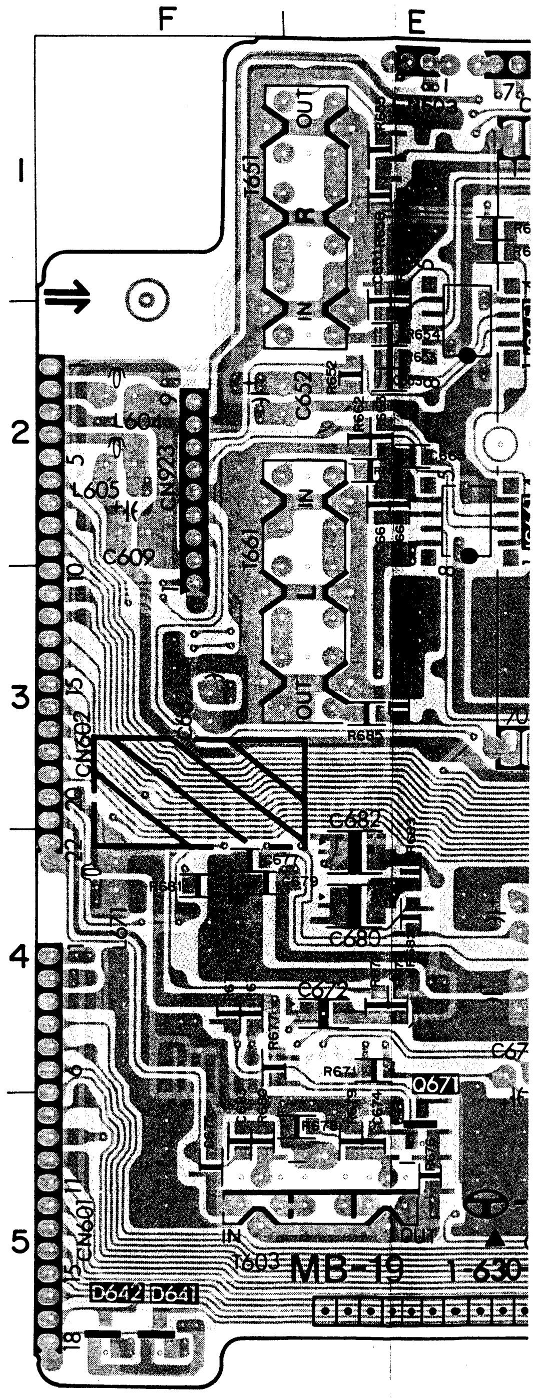
CN601	F-5
CN602	F-3
CN603	E-1
CN605	B-1
CN606	A-1
CN923	F-2
CN924	D-1
IC602	C-3
IC671	E-4
T603	E-5
T651	E-1
T661	E-3
TP601	C-1

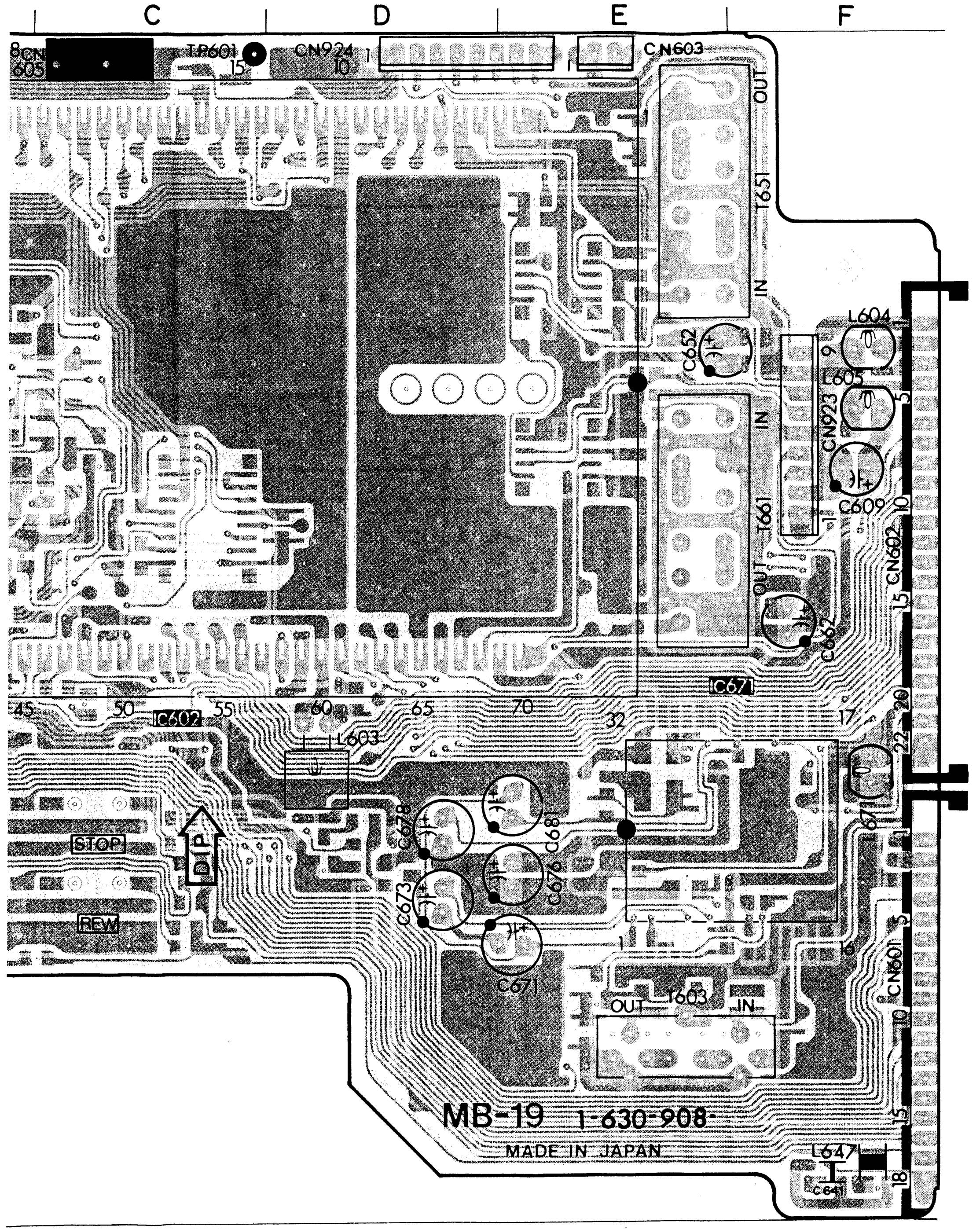
MB-19(1-630-908-13)S

D601	C-3
D602	C-2
D603	C-2
D604	C-1
D641	F-5
D642	F-5
IC601	B-2
IC603	C-2
IC651	E-2
IC661	E-2
Q601	B-3
Q602	A-3
Q603	A-3
Q604	C-2
Q605	C-2
Q606	C-3
Q607	B-3
Q608	D-4
Q609	D-4
Q671	E-5
S641	A-4
S642	B-4
S643	B-4
S644	C-4
S645	C-4
S646	B-4
S647	B-4
S648	A-4
S649	A-4

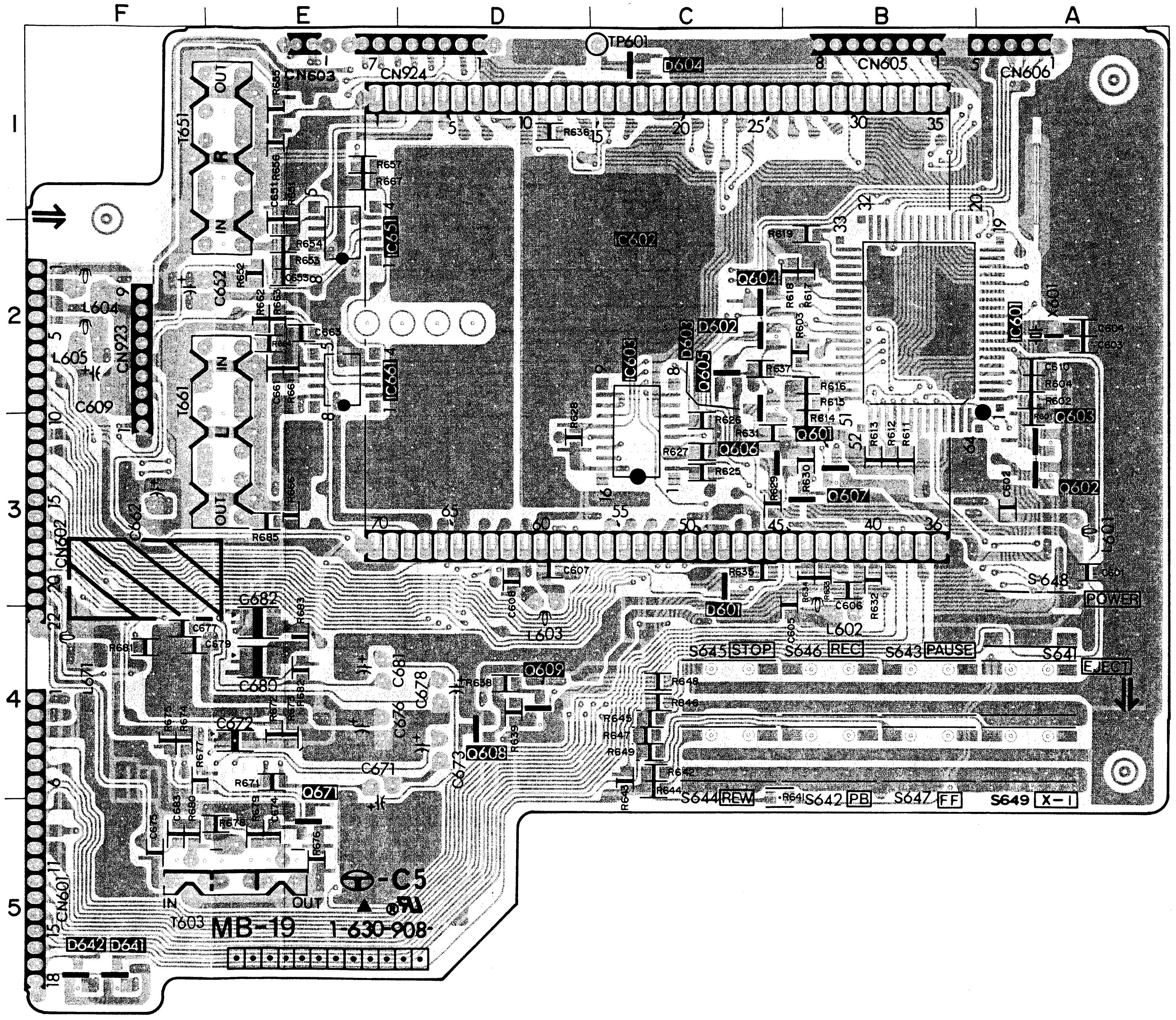

A
B
C
D
E
F
1
2
3
4
5
CN603
TP601
CN924
CN606
OUT
IN
T651
T661
L604
CN923
C609
CN602
IC671
IC602
IC603
POWER
EJECT
PAUSE
REC
STOP
FF
PB
REW
T603
CN601
L647
MB-19 1-630-908
MADE IN JAPAN

MB-19 —COMPONENT SIDE—
1-630-908-13(1)
EVO-9800
EVO-9800P


F
E
1
2
3
4
5
T651
T661
L604
L605
CN923
C609
CN602
C652
R685
C682
C689
C672
Q671
CN601
T603
D642
D641
IN
OUT
MB-19 1-630

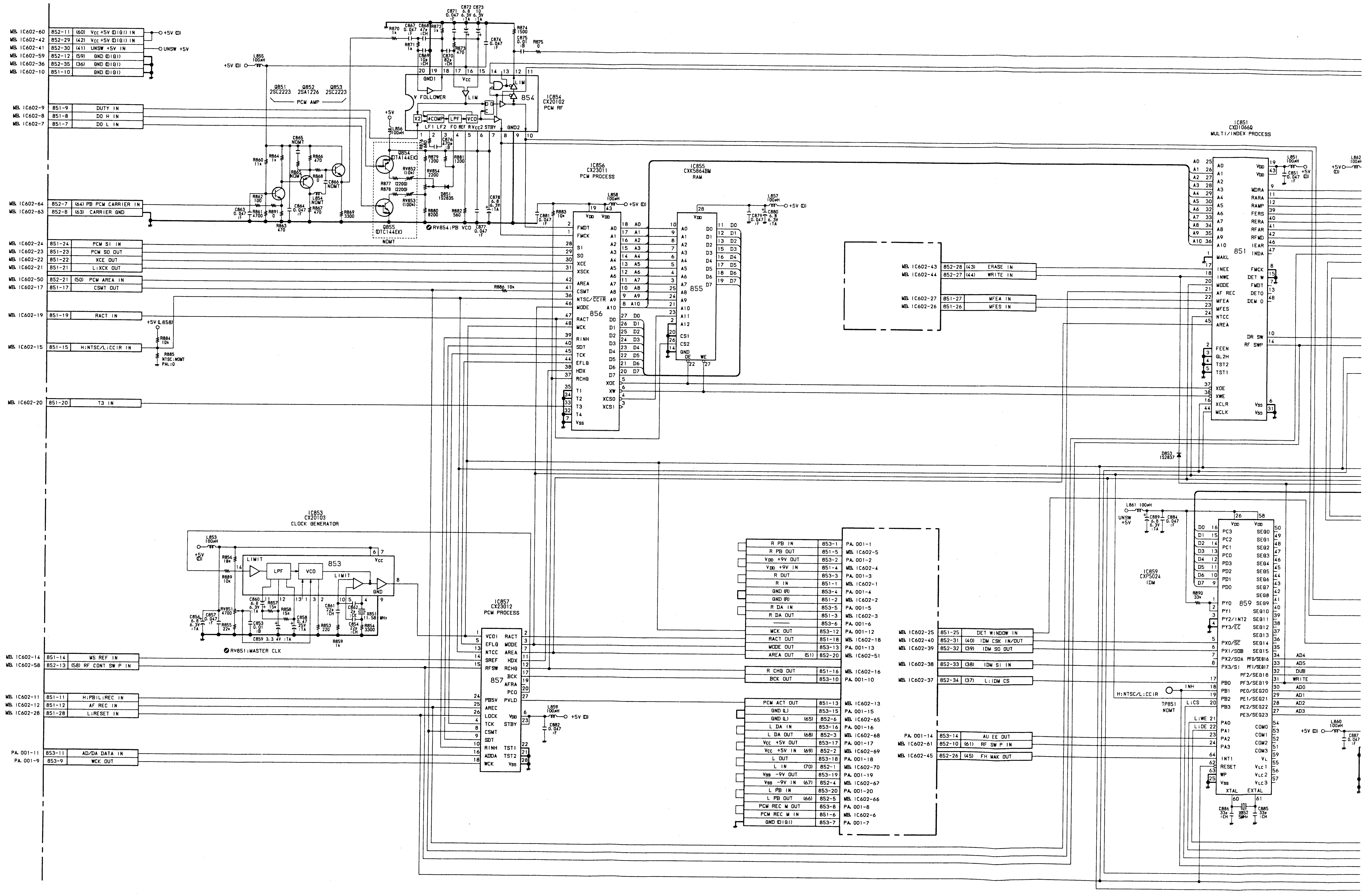

C
D
E
F
CN605
TP601
CN924
CN603
T651
T661
C652
L604
L605
CN923
C609
CN602
C662
IC671
IC602
L603
STOP
REW
DIP
C678
C681
C676
C673
C671
T603
CN601
L647
C641
MB-19 1-630-908-
MADE IN JAPAN

MB-19 —COMPONENT SIDE—
1-630-908-13(1)
EVO-9800
EVO-9800P

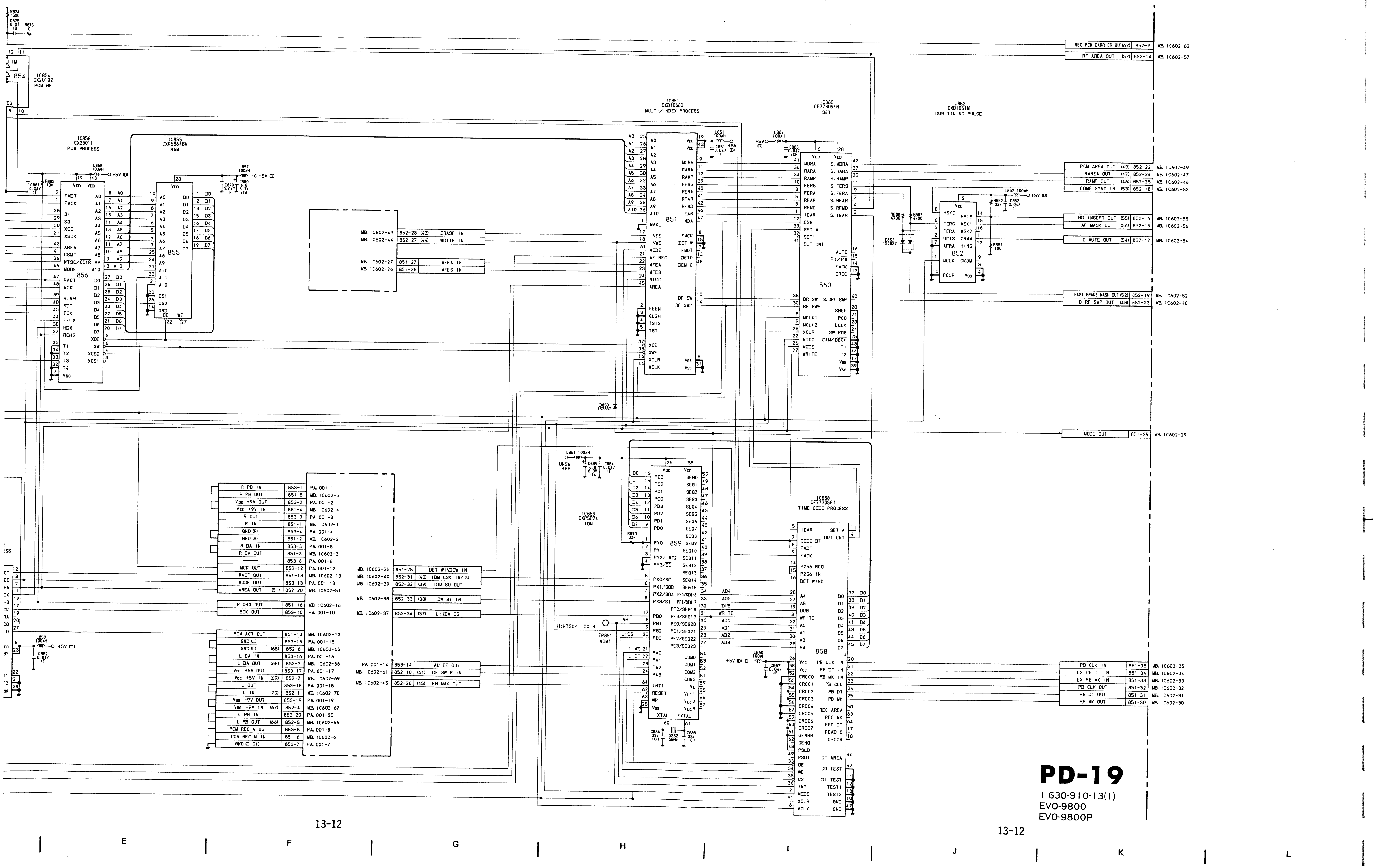

F
E
D
C
B
A
1
2
3
4
5
TP601
CN603
CN924
D604
CN605
CN606
T651
T661
IC651
IC661
IC602
IC603
IC601
Q604
D602
D603
Q605
Q606
Q601
Q607
Q602
C652
L604
L605
CN923
C609
CN602
C662
C682
C680
C681
C676
C678
C672
C671
C673
Q609
Q608
Q671
D601
L603
L602
C606
C607
S645 STOP
S646 REC
S643 PAUSE
S641 EJECT
S648 POWER
S644 REW
S642 PB
S647 FF
S649 X-1
T603
CN601
D642
D641
MB-19 1-630-908-
C5

MB-19 —SOLDERING SIDE—
1-630-908-13(1)
EVO-9800
EVO-9800P

PD-19; PCM AUDIO DIGITAL

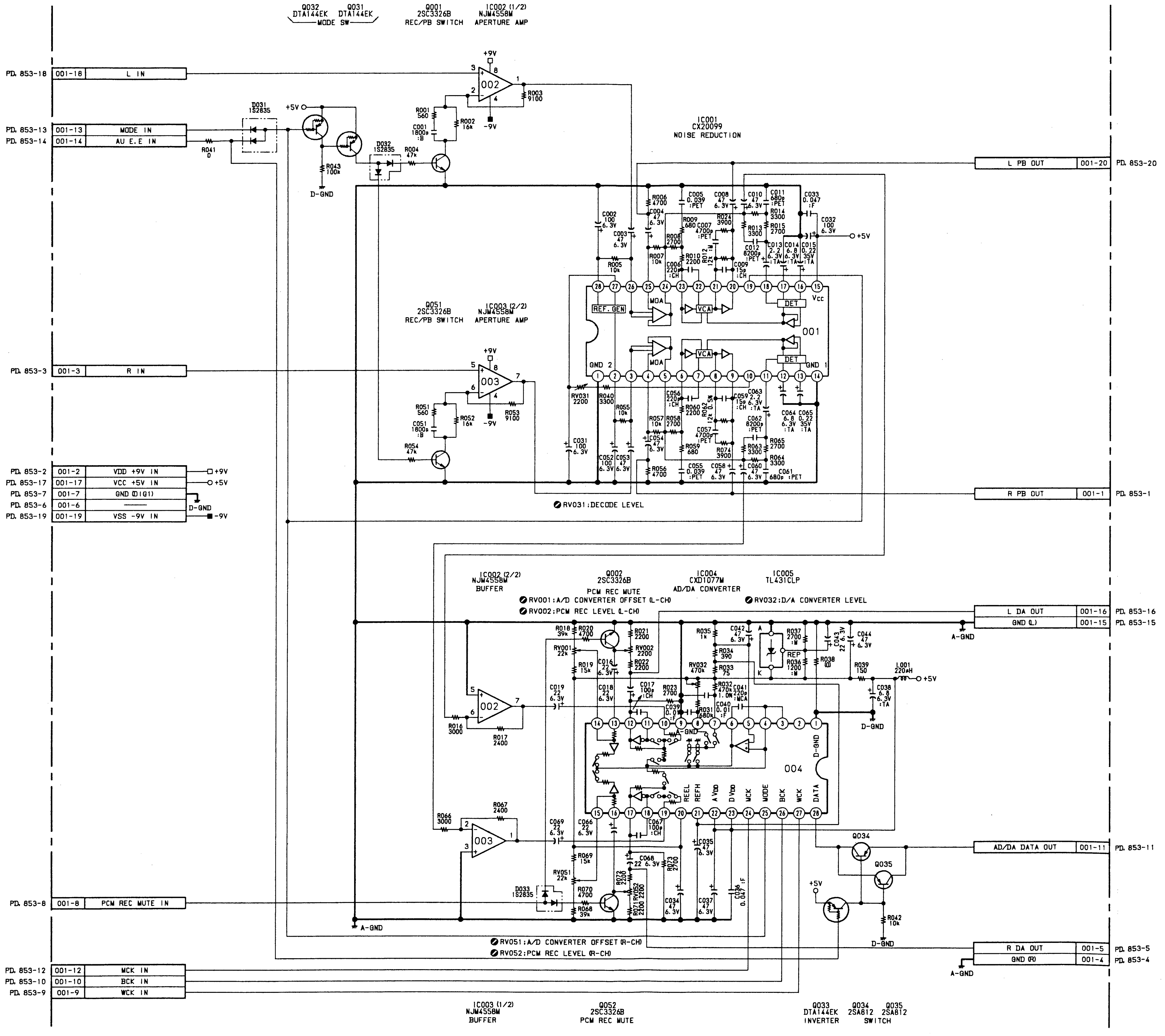

IC854
CX20102
PCM RF
V FOLLOWER
LIM
COMP
LPF
VCO
Q851 2SC2223
Q852 2SA1226
Q853 2SC2223
PCM AMP
Q854 (DTA144EK)
Q855 (DTC144EK)
RV854: PB VCO
IC856
CX23011
PCM PROCESS
IC855
CXK5864BM
RAM
IC851
CXD1066Q
MULTI/INDEX PROCESS
IC853
CX20103
CLOCK GENERATOR
LIMIT
RV851: MASTER CLK
IC857
CX23012
PCM PROCESS
IC859
CXP5024
IDM
852-11 (60) Vcc +5V (DIGI) IN
852-29 (42) Vcc +5V (DIGI) IN
852-30 (41) UNSW +5V IN
852-12 (59) GND (DIGI)
852-35 (36) GND (DIGI)
851-10 GND (DIGI)
851-9 DUTY IN
851-8 DO H IN
851-7 DO L IN
852-7 (64) PB PCM CARRIER IN
852-8 (63) CARRIER GND
851-24 PCM SI IN
851-23 PCM SO OUT
851-22 XCE OUT
851-21 L:XCK OUT
852-21 (50) PCM AREA IN
851-17 CSMT OUT
851-19 RACT IN
851-15 H:NTSC/L:CCIR IN
851-20 T3 IN
851-14 MS REF IN
852-13 (58) RF CONT SW P IN
851-11 H:PBIL:REC IN
851-12 AF REC IN
851-28 L:RESET IN
853-11 AD/DA DATA IN
853-9 WCK OUT
852-28 (43) ERASE IN
852-27 (44) WRITE IN
851-27 MFEA IN
851-26 MFES IN
851-25 DET WINDOW IN
852-31 (40) IDM CSK IN/OUT
852-32 (39) IDM SO OUT
852-33 (38) IDM SI IN
852-34 (37) L:IDM CS
853-14 AU EE OUT
852-10 (61) RF SW P IN
852-26 (45) FH WAK OUT
R PB IN
R PB OUT
VDD +9V OUT
VDD +9V IN
R OUT
R IN
GND (R)
R DA IN
R DA OUT
WCK OUT
RACT OUT
MODE OUT
AREA OUT (51)
R CHG OUT
BCK OUT
PCM ACT OUT
GND (L)
L DA IN
L DA OUT (68)
Vcc +5V OUT
Vcc +5V IN (69)
L OUT
L IN (70)
Vss -9V OUT
Vss -9V IN (67)
L PB IN
L PB OUT (66)
PCM REC M OUT
PCM REC M IN
GND (DIGI)
H:NTSC/L:CCIR
TP851 NOMT
D853 1S2837
D851 1S2835
+5V (D)
UNSW +5V

A | B | C | D | E | F | G | H


IC854
CX20102
PCM RF
IC856
CX23011
PCM PROCESS
IC855
CXK5864BM
RAM
IC851
CXD1066Q
MULTI/INDEX PROCESS
IC860
CF77309FR
SET
IC852
CXD1051M
DUB TIMING PULSE
IC859
CXP5024
IDM
IC858
CF77305FT
TIME CODE PROCESS
L858 100µH
L857 100µH
L851 100µH
L862 100µH
L852 100µH
L861 100µH
L859 100µH
L860 100µH
+5V (D)
UNSW +5V
D853 1S2837
D852 1S2837
TP851 NOMT
H:NTSC/L:CCIR
REC PCM CARRIER OUT(62) 852-9 MB IC602-62
RF AREA OUT (57) 852-14 MB IC602-57
PCM AREA OUT (49) 852-22 MB IC602-49
RAREA OUT (47) 852-24 MB IC602-47
RAMP OUT (46) 852-25 MB IC602-46
COMP SYNC IN (53) 852-18 MB IC602-53
HD INSERT OUT (55) 852-16 MB IC602-55
AF MASK OUT (56) 852-15 MB IC602-56
C MUTE OUT (54) 852-17 MB IC602-54
FAST BRAKE MASK OUT (52) 852-19 MB IC602-52
D RF SWP OUT (48) 852-23 MB IC602-48
MODE OUT 851-29 MB IC602-29
MB IC602-43 852-28 (43) ERASE IN
MB IC602-44 852-27 (44) WRITE IN
MB IC602-27 851-27 MFEA IN
MB IC602-26 851-26 MFES IN
R PB IN 853-1 PA 001-1
R PB OUT 851-5 MB IC602-5
VDD +9V OUT 853-2 PA 001-2
VDD +9V IN 851-4 MB IC602-4
R OUT 853-3 PA 001-3
R IN 851-1 MB IC602-1
GND (R) 853-4 PA 001-4
GND (R) 851-2 MB IC602-2
R DA IN 853-5 PA 001-5
R DA OUT 851-3 MB IC602-3
853-6 PA 001-6
MCK OUT 853-12 PA 001-12
RACT OUT 851-18 MB IC602-18
MODE OUT 853-13 PA 001-13
AREA OUT (51) 852-20 MB IC602-51
R CHG OUT 851-16 MB IC602-16
BCK OUT 853-10 PA 001-10
PCM ACT OUT 851-13 MB IC602-13
GND (L) 853-15 PA 001-15
GND (L) (65) 852-6 MB IC602-65
L DA IN 853-16 PA 001-16
L DA OUT (68) 852-3 MB IC602-68
Vcc +5V OUT 853-17 PA 001-17
Vcc +5V IN (69) 852-2 MB IC602-69
L OUT 853-18 PA 001-18
L IN (70) 852-1 MB IC602-70
Vss -9V OUT 853-19 PA 001-19
Vss -9V IN (67) 852-4 MB IC602-67
L PB IN 853-20 PA 001-20
L PB OUT (66) 852-5 MB IC602-66
PCM REC M OUT 853-8 PA 001-8
PCM REC M IN 851-6 MB IC602-6
GND (DIG) 853-7 PA 001-7
MB IC602-25 851-25 DET WINDOW IN
MB IC602-40 852-31 (40) IDM CSK IN/OUT
MB IC602-39 852-32 (39) IDM SO OUT
MB IC602-38 852-33 (38) IDM SI IN
MB IC602-37 852-34 (37) L:IDM CS
PA 001-14 853-14 AU EE OUT
MB IC602-61 852-10 (61) RF SW P IN
MB IC602-45 852-26 (45) FH MAK OUT
PB CLK IN 851-35 MB IC602-35
EX PB DT IN 851-34 MB IC602-34
EX PB MK IN 851-33 MB IC602-33
PB CLK OUT 851-32 MB IC602-32
PB DT OUT 851-31 MB IC602-31
PB MK OUT 851-30 MB IC602-30
E
F
G
H
I
J
K
L

PD-19

1-630-910-13(1)
EVO-9800
EVO-9800P


Q032 DTA144EK
Q031 DTA144EK
MODE SW
Q001 2SC3326B REC/PB SWITCH
IC002 (1/2) NJM4558M APERTURE AMP
IC001 CX20099 NOISE REDUCTION
Q051 2SC3326B REC/PB SWITCH
IC003 (2/2) NJM4558M APERTURE AMP
PD 853-18 | 001-18 | L IN
PD 853-13 | 001-13 | MODE IN
PD 853-14 | 001-14 | AU E.E IN
PD 853-3 | 001-3 | R IN
PD 853-2 | 001-2 | VDD +9V IN
PD 853-17 | 001-17 | VCC +5V IN
PD 853-7 | 001-7 | GND (DIGI)
PD 853-6 | 001-6
PD 853-19 | 001-19 | VSS -9V IN
PD 853-8 | 001-8 | PCM REC MUTE IN
PD 853-12 | 001-12 | MCK IN
PD 853-10 | 001-10 | BCK IN
PD 853-9 | 001-9 | WCK IN
L PB OUT | 001-20 | PD 853-20
R PB OUT | 001-1 | PD 853-1
L DA OUT | 001-16 | PD 853-16
GND (L) | 001-15 | PD 853-15
AD/DA DATA OUT | 001-11 | PD 853-11
R DA OUT | 001-5 | PD 853-5
GND (R) | 001-4 | PD 853-4
D031 1S2835
D032 1S2835
D033 1S2835
D-GND
A-GND
+9V
+5V
-9V
REF. GEN
MOA
VCA
DET
GND 1
GND 2
Vcc
001
002
003
004
RV031 : DECODE LEVEL
IC002 (2/2) NJM4558M BUFFER
Q002 2SC3326B PCM REC MUTE
IC004 CXD1077M AD/DA CONVERTER
IC005 TL431CLP
RV001 : A/D CONVERTER OFFSET (L-CH)
RV002 : PCM REC LEVEL (L-CH)
RV032 : D/A CONVERTER LEVEL
RV051 : A/D CONVERTER OFFSET (R-CH)
RV052 : PCM REC LEVEL (R-CH)
REP
L001 220µH
REEL
REFH
AVDD
DVDD
MCK
MODE
BCK
WCK
DATA
IC003 (1/2) NJM4558M BUFFER
Q052 2SC3326B PCM REC MUTE
Q033 DTA144EK INVERTER
Q034 2SA812
Q035 2SA812
SWITCH

PA-27

1-630-909-13(1)
EVO-9800
EVO-9800P

PD-19(1

CN851
CN852
CN853

D851
D852
D853

IC851
IC852
IC856
IC857
IC858

Q851

RV851
RV854

X851
X852

PA-27(1

CN001

D033

IC001
IC002
IC003
IC004
IC005

RV001
RV002
RV031
RV032
RV051
RV052

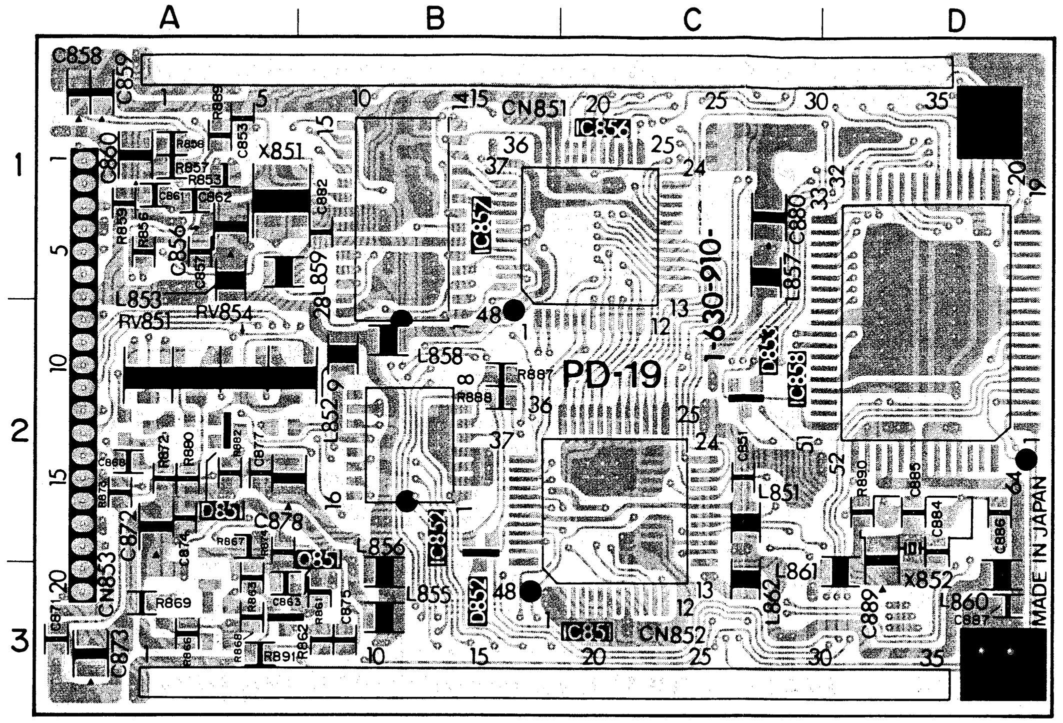
PD-19 ;　PCM AUDIO DIGITAL
PA-27 ;　PCM AUDIO ANALOG

PD-19(1-630-910-13)C

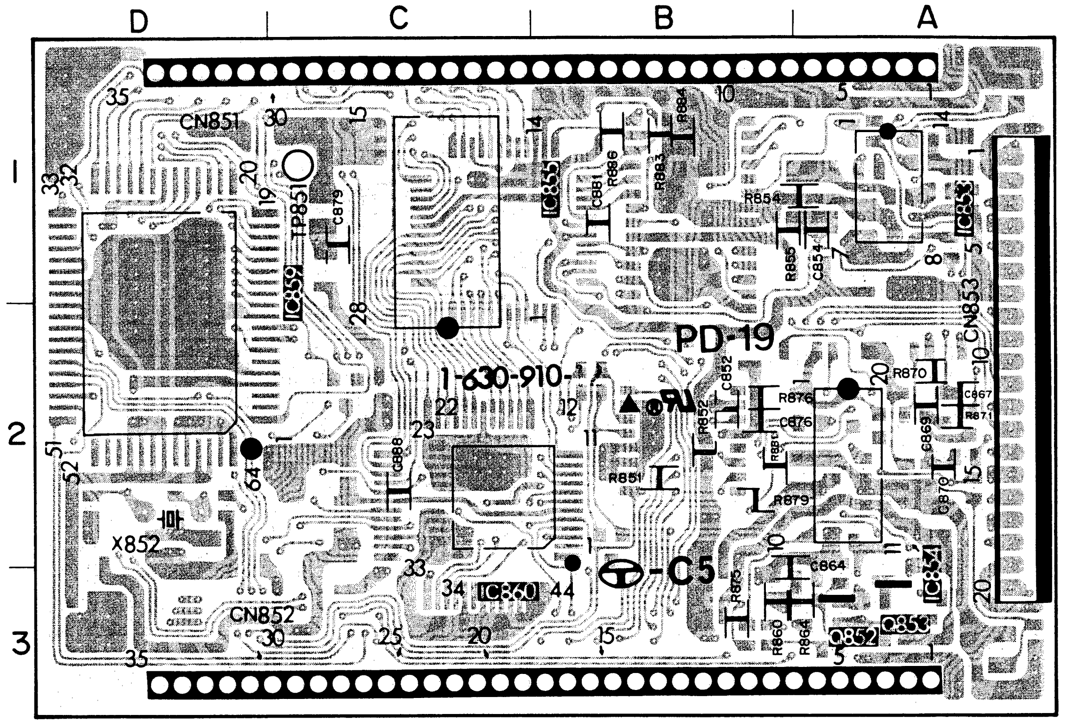
CN851	B-1
CN852	C-3
CN853	A-2
D851	A-2
D852	B-2
D853	C-2
IC851	C-2
IC852	B-2
IC856	C-1
IC857	B-1
IC858	D-2
Q851	A-3
RV851	A-2
RV854	A-2
X851	A-1
X852	D-2

PD-19(1-630-910-13)S

IC853	A-1
IC854	A-2
IC855	C-1
IC859	D-1
IC860	C-2
Q852	A-3
Q853	A-3
TP851	C-1


A
B
C
D
1
2
3
CN851
CN852
CN853
PD-19
1-630-910-
MADE IN JAPAN

PD-19 —COMPONEND SIDE—
1-630-910-13(1)
EVO-9800


D
C
B
A
1
2
3
CN851
CN852
CN853
PD-19
1-630-910-
TP851

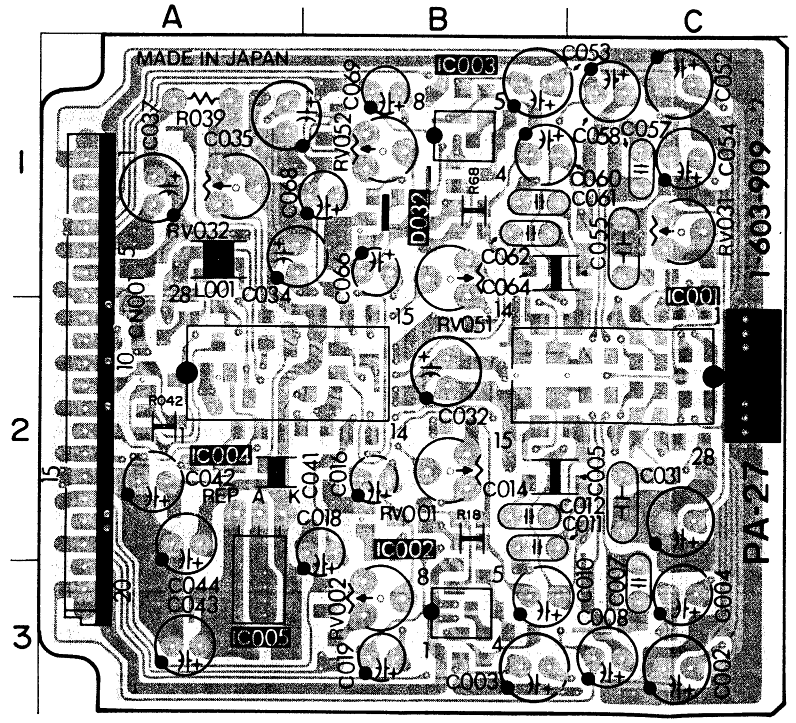
PD-19 —SOLDERING SIDE—
1-630-910-13(1)
EVO-9800

PA-27(1-630-909-13)C

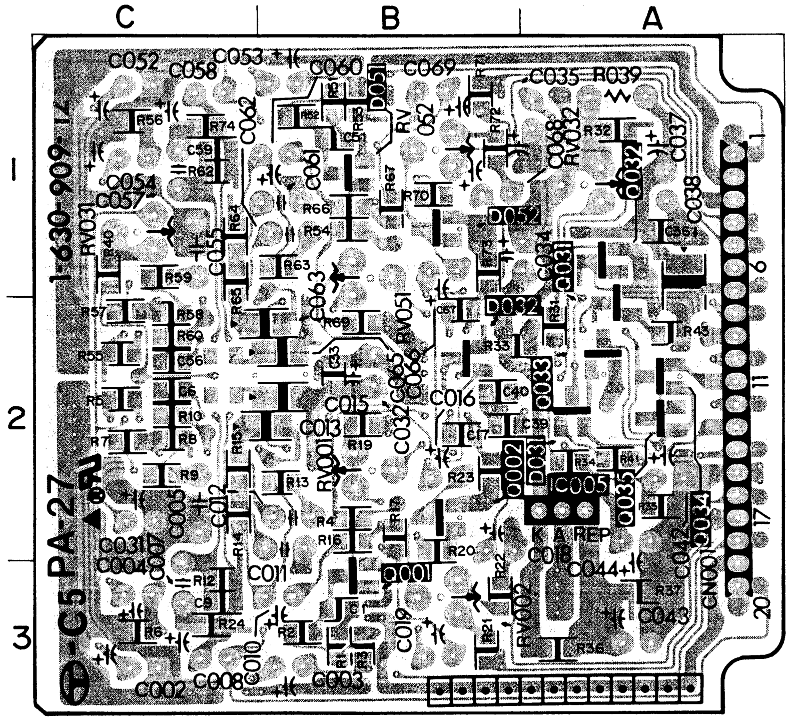
CN001	A-2
D033	B-1
IC001	C-2
IC002	B-3
IC003	B-1
IC004	A-2
IC005	A-2
RV001	B-2
RV002	B-3
RV031	C-1
RV032	A-1
RV051	B-1
RV052	B-1

PA-27(1-630-909-13)S

D031	A-2
D032	B-2
Q001	B-3
Q002	B-2
Q031	A-1
Q032	A-1
Q033	A-2
Q034	A-2
Q035	A-2
Q051	B-1
Q052	B-1

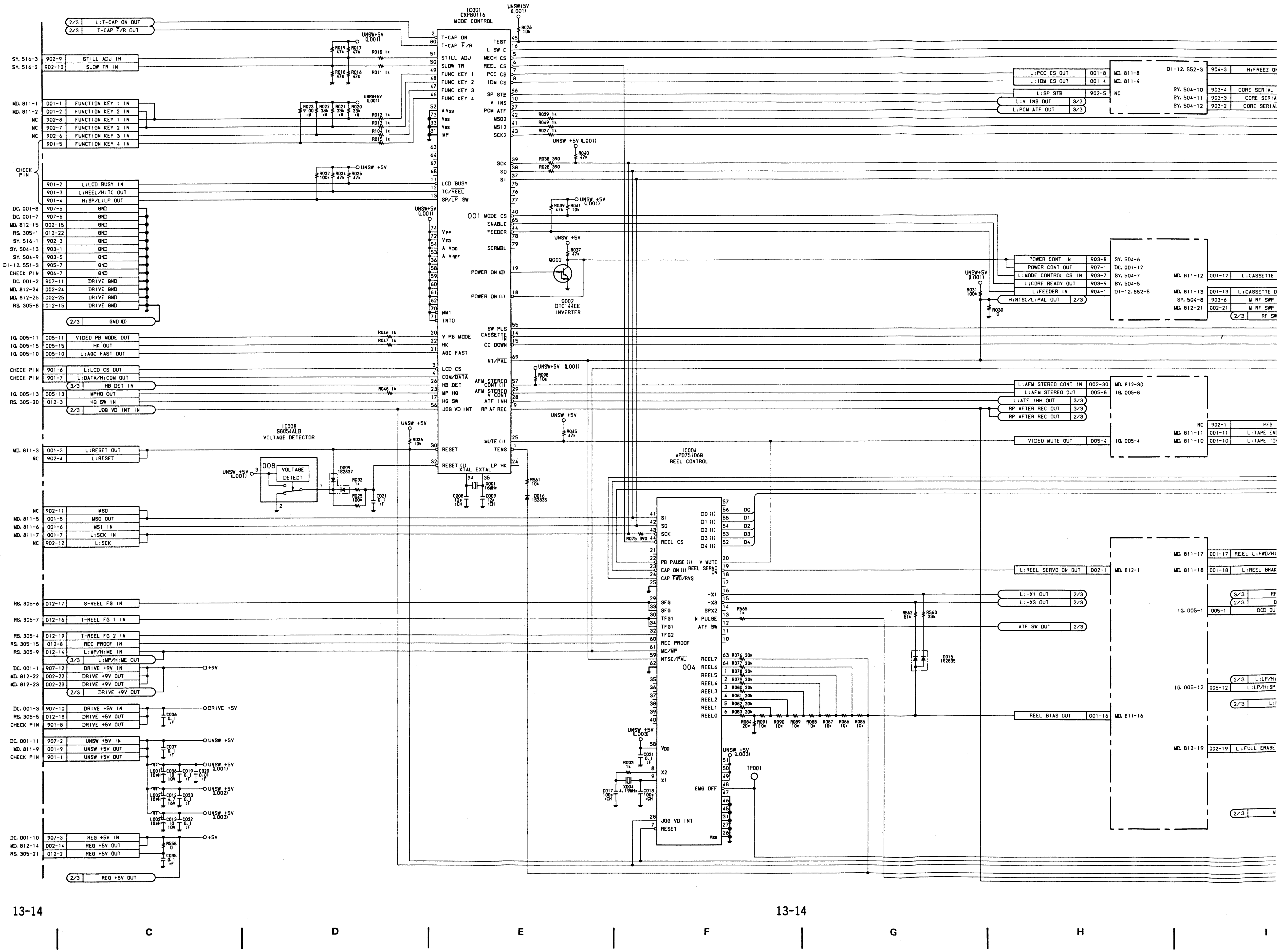

A
B
C
1
2
3
MADE IN JAPAN
PA-27
1-630-909
CN001
REP A K

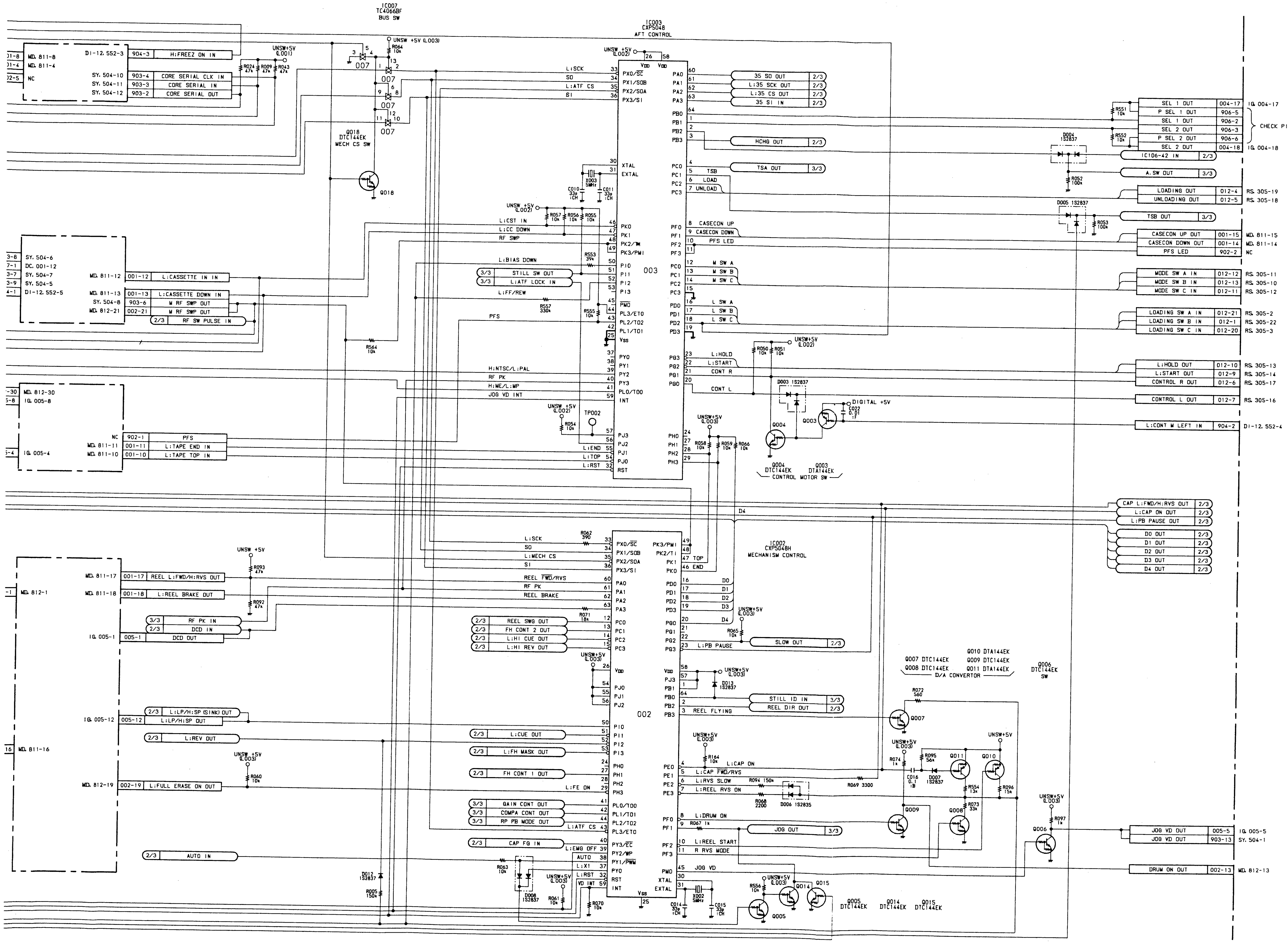
PA-27 —COMPONENT SIDE—
1-630-909-13(1)
EVO-9800


C
B
A
1
2
3
PA-27
1-630-909
CN001
K A REP

PA-27 —SOLDERING SIDE—
1-630-909-13(1)
EVO-9800

SE 10P (1/3); MODE/MECHANISM/ATF/REEL CONTROL

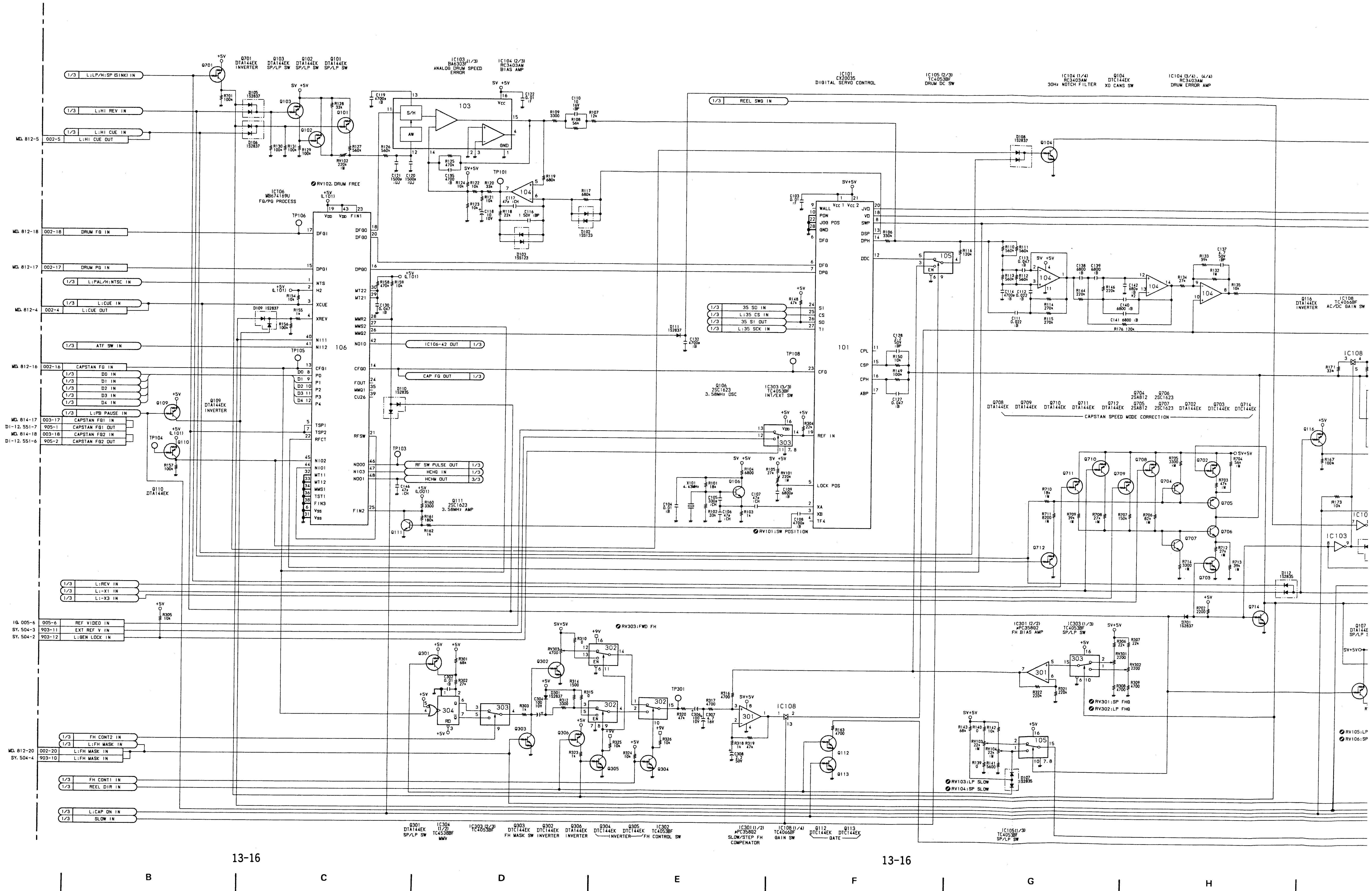

IC001
CXP80116
MODE CONTROL
IC004
μPD751068
REEL CONTROL
IC008
S8054ALB
VOLTAGE DETECTOR
VOLTAGE DETECT
Q002
DTC144EK
INVERTER
D009
1S2837
D015
1S2835
D016
1S2835
X001
16MHz
X004
4.19MHz
TP001
T-CAP ON
T-CAP F/R
STILL ADJ
SLOW TR
FUNC KEY 1
FUNC KEY 2
FUNC KEY 3
FUNC KEY 4
TEST
L SW C
MECH CS
REEL CS
PCC CS
IDM CS
SP STB
V INS
PCM ATF
MSO2
MSI2
SCK2
SCK
SO
SI
LCD BUSY
TC/REEL
SP/LP SW
MODE CS
ENABLE
FEEDER
SCRMBL
POWER ON (O)
POWER ON (I)
NMI
INTO
SW PLS
CASSETTE IN
CC DOWN
NT/PAL
V PB MODE
HK
AGC FAST
LCD CS
COM/DATA
HB DET
MP HG
HG SW
JOG VD INT
AFM STEREO CONT (I)
AFM STEREO V CONT
ATF INH
RP AF REC
MUTE (I)
TENS
RESET
RESET (I)
XTAL EXTAL
LP HK
PB PAUSE (I)
CAP ON (I)
CAP FWD/RVS
V MUTE
REEL SERVO ON
-X1
-X3
SPX2
N PULSE
ATF SW
SFG
TFG1
TFG2
REC PROOF
ME/MP
NTSC/PAL
REEL7
REEL6
REEL5
REEL4
REEL3
REEL2
REEL1
REEL0
VDD
X2
X1
EMG OFF
JOG VD INT
RESET
VSS
D0 (I)
D1 (I)
D2 (I)
D3 (I)
D4 (I)
L:T-CAP ON OUT
T-CAP F/R OUT
STILL ADJ IN
SLOW TR IN
FUNCTION KEY 1 IN
FUNCTION KEY 2 IN
FUNCTION KEY 3 IN
FUNCTION KEY 4 IN
CHECK PIN
L:LCD BUSY IN
L:REEL/H:TC OUT
H:SP/L:LP OUT
GND
DRIVE GND
GND (D)
VIDEO PB MODE OUT
HK OUT
L:AGC FAST OUT
L:LCD CS OUT
L:DATA/H:COM OUT
HB DET IN
MPHG OUT
HG SW IN
JOG VD INT IN
L:RESET OUT
L:RESET
MSO
MSO OUT
MSI IN
L:SCK IN
L:SCK
S-REEL FG IN
T-REEL FG 1 IN
T-REEL FG 2 IN
REC PROOF IN
L:MP/H:ME IN
L:MP/H:ME OUT
DRIVE +9V IN
DRIVE +9V OUT
DRIVE +5V IN
DRIVE +5V OUT
UNSW +5V IN
UNSW +5V OUT
REG +5V IN
REG +5V OUT
+9V
DRIVE +5V
UNSW +5V
UNSW +5V (L001)
UNSW +5V (L002)
UNSW +5V (L003)
+5V
L:PCC CS OUT
L:IDM CS OUT
L:SP STB
L:V INS OUT
L:PCM ATF OUT
H:FREEZ ON
CORE SERIAL
POWER CONT IN
POWER CONT OUT
L:MODE CONTROL CS IN
L:CORE READY OUT
L:FEEDER IN
H:NTSC/L:PAL OUT
L:CASSETTE
M RF SWP
RF SW
L:AFM STEREO CONT IN
L:AFM STEREO OUT
L:ATF INH OUT
RP AFTER REC OUT
VIDEO MUTE OUT
PFS
L:TAPE END
L:TAPE TOP
L:REEL SERVO ON OUT
REEL L:FWD/H
L:REEL BRAKE
L:-X1 OUT
L:-X3 OUT
ATF SW OUT
DCD OUT
REEL BIAS OUT
L:LP/H:SP
L:FULL ERASE
A
B
C
D
E
F
G
H
I

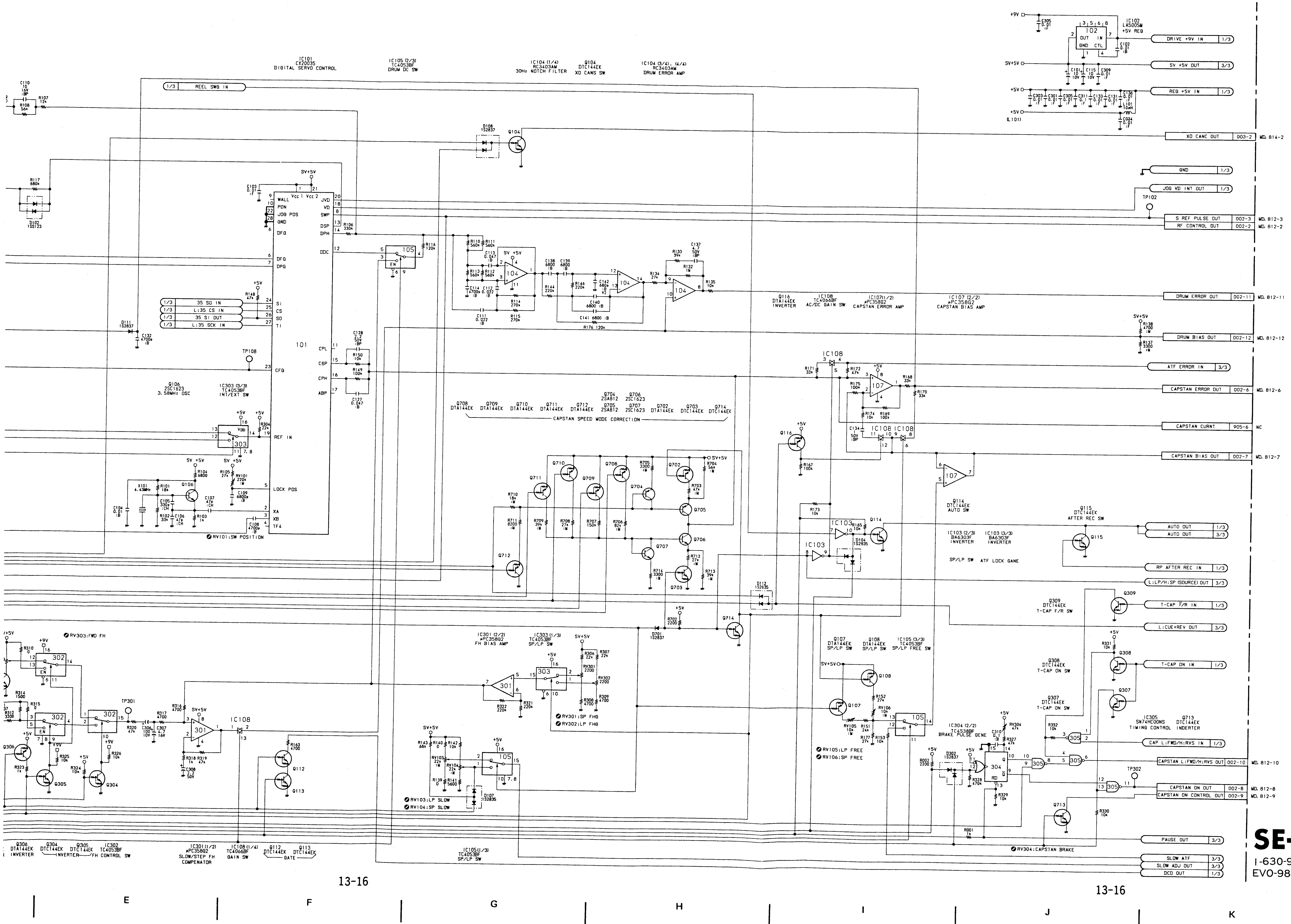

IC007
TC4066BF
BUS SW
IC003
CXP5048
AFT CONTROL
Q018
DTC144EK
MECH CS SW
H:FREEZ ON IN
CORE SERIAL CLK IN
CORE SERIAL IN
CORE SERIAL OUT
L:SCK
SO
L:ATF CS
SI
XTAL
EXTAL
X003
5MHz
35 SO OUT
L:35 SCK OUT
L:35 CS OUT
35 SI IN
HCHG OUT
TSA OUT
TSB
LOAD
UNLOAD
SEL 1 OUT
P SEL 1 OUT
SEL 2 OUT
P SEL 2 OUT
CHECK PIN
D004
1S2837
IC106-42 IN
A.SW OUT
LOADING OUT
UNLOADING OUT
D005 1S2837
TSB OUT
L:CST IN
L:CC DOWN
RF SWP
L:BIAS DOWN
STILL SW OUT
L:ATF LOCK IN
L:FF/REW
PFS
CASECON UP
CASECON DOWN
PFS LED
CASECON UP OUT
CASECON DOWN OUT
MODE SW A IN
MODE SW B IN
MODE SW C IN
M SW A
M SW B
M SW C
L SW A
L SW B
L SW C
LOADING SW A IN
LOADING SW B IN
LOADING SW C IN
L:CASSETTE IN IN
L:CASSETTE DOWN IN
M RF SWP OUT
RF SW PULSE IN
L:HOLD
L:START
CONT R
CONT L
L:HOLD OUT
L:START OUT
CONTROL R OUT
CONTROL L OUT
D003 1S2837
DIGITAL +5V
Q004
Q003
DTC144EK
DTA144EK
CONTROL MOTOR SW
L:CONT M LEFT IN
H:NTSC/L:PAL
RF PK
H:ME/L:MP
JOG VD INT
TP002
L:END
L:TOP
L:RST
L:TAPE END IN
L:TAPE TOP IN
003
CAP L:FWD/H:RVS OUT
L:CAP ON OUT
L:PB PAUSE OUT
D0 OUT
D1 OUT
D2 OUT
D3 OUT
D4 OUT
IC002
CXP5048H
MECHANISM CONTROL
L:MECH CS
REEL FWD/RVS
REEL BRAKE
REEL L:FWD/H:RVS OUT
L:REEL BRAKE OUT
RF PK IN
DCD IN
DCD OUT
REEL SWG OUT
FH CONT 2 OUT
L:HI CUE OUT
L:HI REV OUT
SLOW OUT
L:PB PAUSE
D013
1S2837
STILL ID IN
REEL DIR OUT
REEL FLYING
002
L:LP/H:SP (SINK) OUT
L:LP/H:SP OUT
L:REV OUT
L:CUE OUT
L:FH MASK OUT
FH CONT 1 OUT
L:FE ON
L:FULL ERASE ON OUT
GAIN CONT OUT
COMPA CONT OUT
RP PB MODE OUT
CAP FG IN
AUTO IN
L:EMG OFF
L:CAP ON
L:CAP FWD/RVS
L:RVS SLOW
L:REEL RVS ON
D006 1S2835
L:DRUM ON
JOG OUT
L:REEL START
R RVS MODE
JOG VD
Q007 DTC144EK
Q008 DTC144EK
Q009 DTC144EK
Q010 DTA144EK
Q011 DTA144EK
D/A CONVERTOR
Q006
DTC144EK
SW
JOG VD OUT
DRUM ON OUT
Q005
Q014
Q015
DTC144EK
X002
5MHz
D012
1S2837
D008
1S2837
UNSW +5V

SE-10P(1/3)

1-630-906-14(1)
EVO-9800P

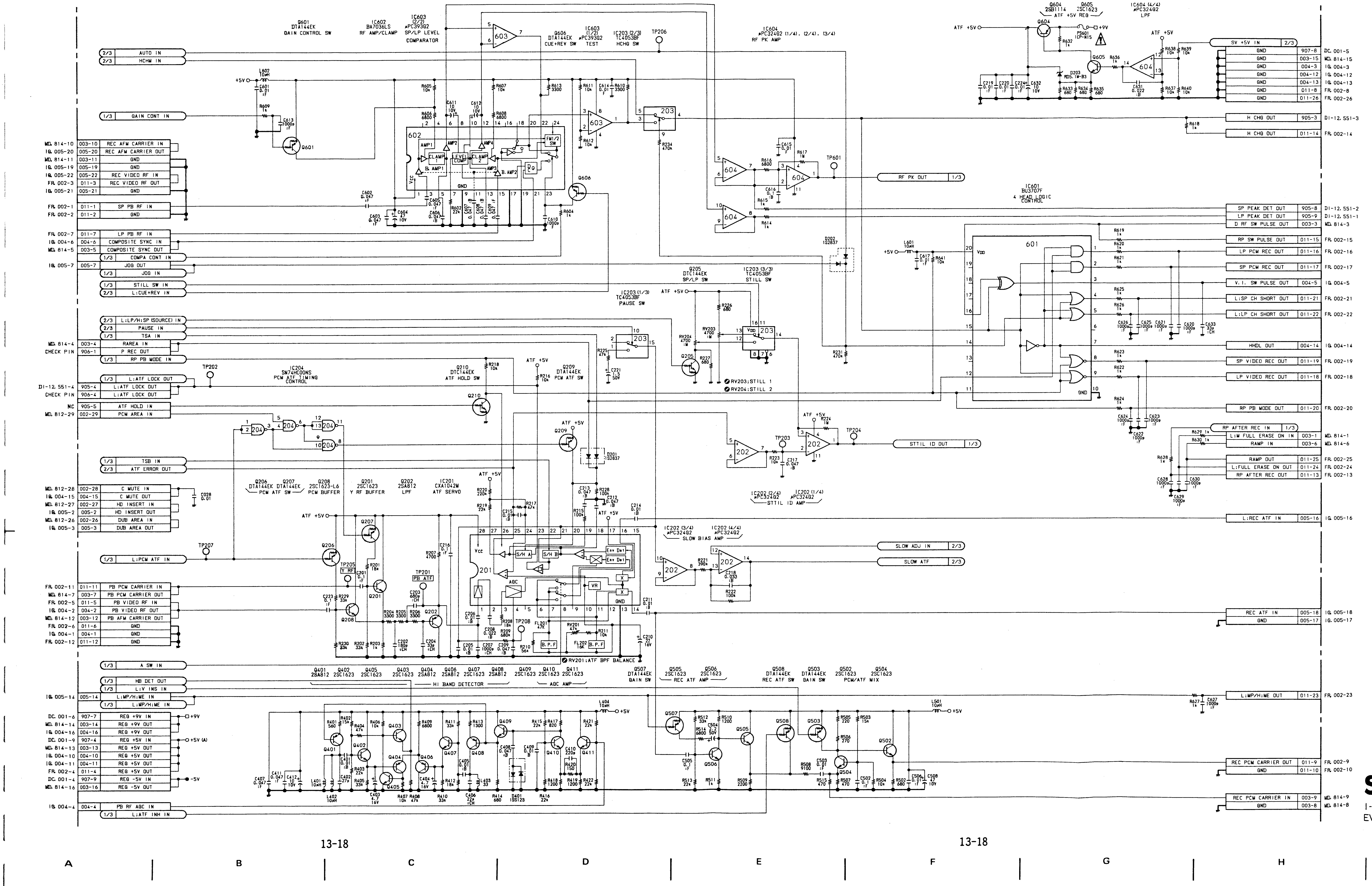
SE-10P (2/3); DRUM/CAPSTAN SERVO


L:LP/H:SP (SINK) IN
L:HI REV IN
L:HI CUE IN
L:HI CUE OUT
DRUM FG IN
DRUM PG IN
L:PAL/H:NTSC IN
L:CUE IN
L:CUE OUT
ATF SW IN
CAPSTAN FG IN
D0 IN
D1 IN
D2 IN
D3 IN
D4 IN
L:PB PAUSE IN
CAPSTAN FG1 IN
CAPSTAN FG1 OUT
CAPSTAN FG2 IN
CAPSTAN FG2 OUT
L:REV IN
L:-X1 IN
L:-X3 IN
REF VIDEO IN
EXT REF V IN
L:GEN LOCK IN
FH CONT2 IN
L:FH MASK IN
L:FH MASK IN
L:FH MASK IN
FH CONT1 IN
REEL DIR IN
L:CAP ON IN
SLOW IN
REEL SWG IN
35 SD IN
L:35 CS IN
35 SI OUT
L:35 SCK IN
IC106-42 OUT
CAP FG OUT
RF SW PULSE OUT
HCHG IN
HCHM OUT
Q701 DTA144EK INVERTER
Q103 DTA144EK SP/LP SW
Q102 DTA144EK SP/LP SW
Q101 DTA144EK SP/LP SW
IC103 (1/3) BA6303F ANALOG DRUM SPEED ERROR
IC104 (2/3) RC3403AM BIAS AMP
IC101 CX20035 DIGITAL SERVO CONTROL
IC105 (2/3) TC4053BF DRUM DC SW
IC104 (1/4) RC3403AM 30Hz NOTCH FILTER
Q104 DTC144EK XO CANS SW
IC104 (3/4), (4/4) RC3403AM DRUM ERROR AMP
IC106 MB674169U FG/PG PROCESS
RV102: DRUM FREE
Q109 DTA144EK INVERTER
Q110 DTA144EK
Q111 2SC1623 3.58MHz AMP
Q106 2SC1623 3.58MHz OSC
IC303 (3/3) TC4053BF INT/EXT SW
RV101: SW POSITION
Q116 DTA144EK INVERTER
IC108 TC4066BF AC/DC GAIN SW
CAPSTAN SPEED MODE CORRECTION
RV303: FWD FH
IC301 (2/2) µPC358G2 FH BIAS AMP
IC303 (1/3) TC4053BF SP/LP SW
RV301: SP FHG
RV302: LP FHG
RV103: LP SLOW
RV104: SP SLOW
RV105: LP
RV106: SP
Q301 DTA144EK SP/LP SW
IC304 (1/2) TC4538BF MMV
IC303 (2/3) TC4053BF
Q303 DTC144EK FH MASK SW
Q302 DTC144EK INVERTER
Q306 DTA144EK INVERTER
Q304 DTC144EK
Q305 DTC144EK INVERTER
IC302 TC4053BF FH CONTROL SW
IC301 (1/2) µPC358G2 SLOW/STEP FH COMPENATOR
IC108 (1/4) TC4066BF GAIN SW
Q112 DTC144EK
Q113 DTC144EK GATE
IC105 (1/3) TC4053BF SP/LP SW
MD. 812-5
MD. 812-18
MD. 812-17
MD. 812-4
MD. 812-16
MD. 814-17
DI-12, S51-7
MD. 814-18
DI-12, S51-6
IG. 005-6
SY. 504-3
SY. 504-2
MD. 812-20
SY. 504-4
A
B
C
D
E
F
G
H


IC101 CX20035 DIGITAL SERVO CONTROL
IC105 (2/3) TC4053BF DRUM DC SW
IC104 (1/4) RC3403AM 30Hz NOTCH FILTER
Q104 DTC144EK XO CANS SW
IC104 (3/4), (4/4) RC3403AM DRUM ERROR AMP
IC102 LA5005M +5V REG
REEL SWG IN
DRIVE +9V IN
SV +5V OUT
REG +5V IN
XO CANC OUT
GND
JOG VD INT OUT
TP102
S REF PULSE OUT
RF CONTROL OUT
DRUM ERROR OUT
DRUM BIAS OUT
ATF ERROR IN
CAPSTAN ERROR OUT
CAPSTAN CURNT
CAPSTAN BIAS OUT
MD. 814-2
MD. 812-3
MD. 812-2
MD. 812-11
MD. 812-12
MD. 812-6
NC
MD. 812-7
35 SO IN
L:35 CS IN
35 SI OUT
L:35 SCK IN
TP108
Q106 2SC1623 3.58MHz OSC
IC303 (3/3) TC4053BF INT/EXT SW
REF IN
LOCK POS
RV101:SW POSITION
Q116 DTA144EK INVERTER
IC108 TC4066BF AC/DC GAIN SW
IC107(1/2) μPC358G2 CAPSTAN ERROR AMP
IC107 (2/2) μPC358G2 CAPSTAN BIAS AMP
CAPSTAN SPEED MODE CORRECTION
Q114 DTC144EK AUTO SW
Q115 DTC144EK AFTER REC SW
IC103 (2/3) BA6303F INVERTER
IC103 (3/3) BA6303F INVERTER
SP/LP SW
ATF LOCK GANE
AUTO OUT
RP AFTER REC IN
L:LP/H:SP (SOURCE) OUT
T-CAP F/R IN
L:CUE+REV OUT
T-CAP ON IN
Q309 DTC144EK T-CAP F/R SW
Q308 DTC144EK T-CAP ON SW
Q307 DTC144EK T-CAP ON SW
IC305 SN74HC00NS TIMING CONTROL
Q713 DTC144EK INDERTER
CAP L:FWD/H:RVS IN
CAPSTAN L:FWD/H:RVS OUT
CAPSTAN ON OUT
CAPSTAN ON CONTROL OUT
MD. 812-10
MD. 812-8
MD. 812-9
TP302
IC304 (2/2) TC4538BF BRAKE PULSE GENE
RV304:CAPSTAN BRAKE
PAUSE OUT
SLOW ATF
SLOW ADJ OUT
DCD OUT
Q107 DTA144EK SP/LP SW
Q108 DTA144EK SP/LP SW
IC105 (3/3) TC4053BF SP/LP FREE SW
RV105:LP FREE
RV106:SP FREE
IC301 (2/2) μPC358G2 FH BIAS AMP
IC303 (1/3) TC4053BF SP/LP SW
RV301:SP FHG
RV302:LP FHG
RV103:LP SLOW
RV104:SP SLOW
IC105(1/3) TC4053BF SP/LP SW
RV303:FWD FH
TP301
Q306 DTA144EK INVERTER
Q304 DTC144EK INVERTER
Q305 DTC144EK INVERTER
IC302 TC4053BF FH CONTROL SW
IC301 (1/2) μPC358G2 SLOW/STEP FH COMPENATOR
IC108 (1/4) TC4066BF GAIN SW
Q112 DTC144EK
Q113 DTC144EK
GATE
E
F
G
H
I
J
K
L

SE-10P(2/3)
1-630-906-14(1)
EVO-9800P

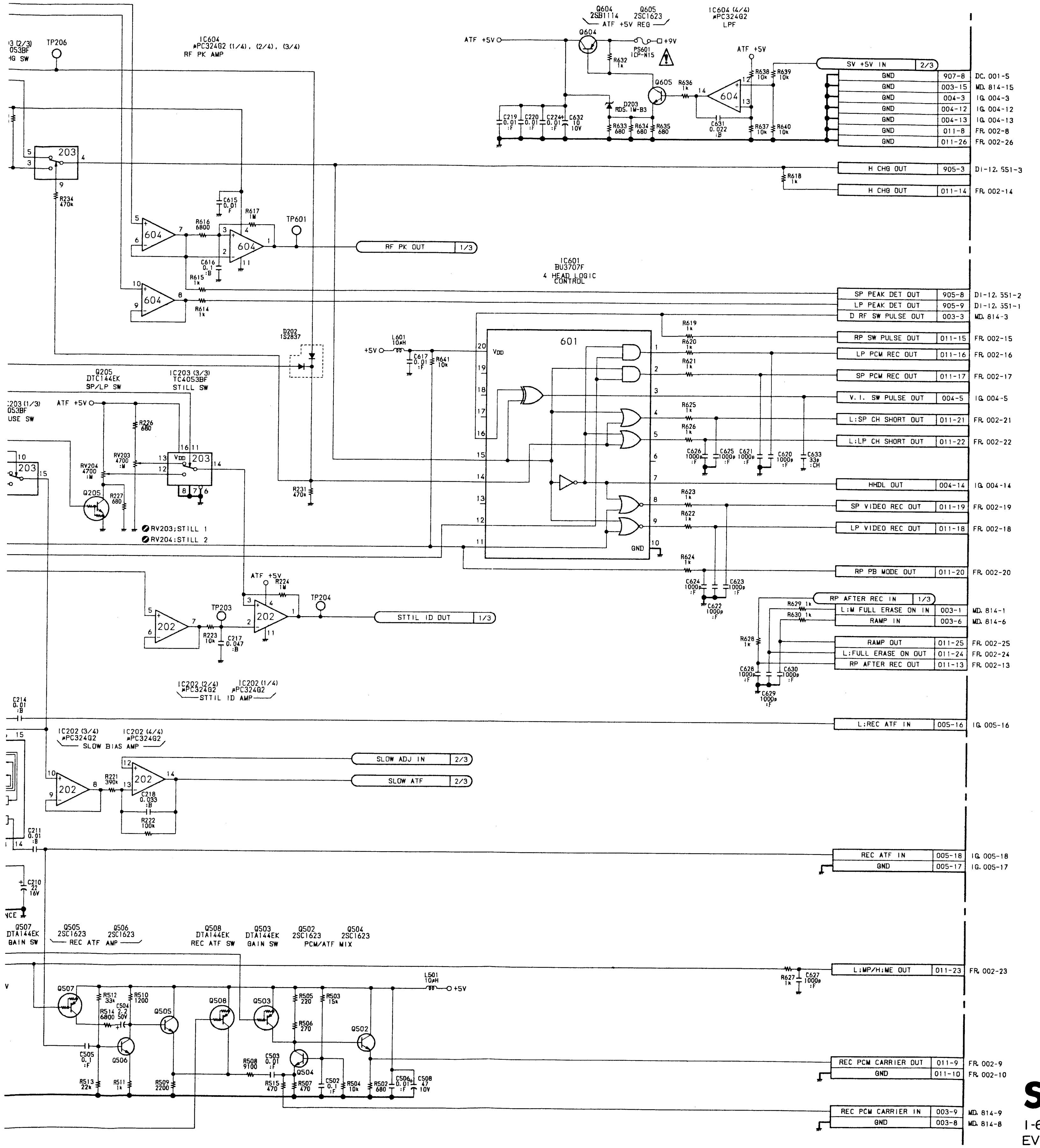
SE-10P (3/3); ATF SERVO
IG-4; TERMINAL

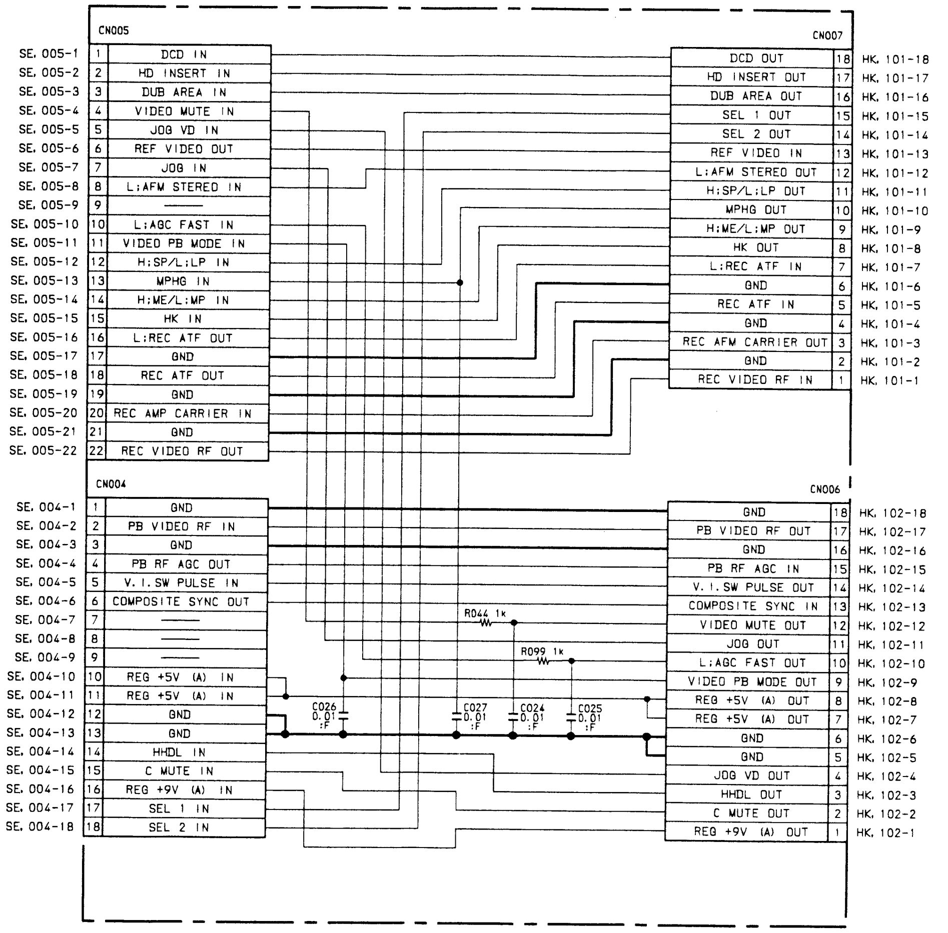

Q601 DTA144EK GAIN CONTROL SW
IC602 BA7036LS RF AMP/CLAMP
IC603 (2/2) μPC393G2 SP/LP LEVEL COMPARATOR
Q606 DTA144EK CUE+REV SW
IC603 (1/2) μPC393G2 TEST
IC203 (2/3) TC4053BF HCHG SW
TP206
IC604 μPC324G2 (1/4), (2/4), (3/4) RF PK AMP
Q604 2SB1114
Q605 2SC1623
ATF +5V REG
IC604 (4/4) μPC324G2 LPF
ATF +5V
AUTO IN
HCHM IN
GAIN CONT IN
REC AFM CARRIER IN
REC AFM CARRIER OUT
GND
REC VIDEO RF IN
REC VIDEO RF OUT
SP PB RF IN
LP PB RF IN
COMPOSITE SYNC IN
COMPOSITE SYNC OUT
COMPA CONT IN
JOG OUT
JOG IN
STILL SW IN
L:CUE+REV IN
L:LP/H:SP (SOURCE) IN
PAUSE IN
TSA IN
RAREA IN
P REC OUT
RP PB MODE IN
L:ATF LOCK OUT
ATF HOLD IN
PCM AREA IN
TSB IN
ATF ERROR OUT
C MUTE IN
C MUTE OUT
HD INSERT IN
HD INSERT OUT
DUB AREA IN
DUB AREA OUT
L:PCM ATF IN
PB PCM CARRIER IN
PB PCM CARRIER OUT
PB VIDEO RF IN
PB VIDEO RF OUT
PB AFM CARRIER OUT
A SW IN
HB DET OUT
L:V INS IN
L:MP/H:ME IN
REG +9V IN
REG +9V OUT
REG +5V IN
REG +5V OUT
REG -5V IN
REG -5V OUT
PB RF AGC IN
L:ATF INH IN
SV +5V IN
H CHG OUT
RF PK OUT
SP PEAK DET OUT
LP PEAK DET OUT
D RF SW PULSE OUT
RP SW PULSE OUT
LP PCM REC OUT
SP PCM REC OUT
V. I. SW PULSE OUT
L:SP CH SHORT OUT
L:LP CH SHORT OUT
HHDL OUT
SP VIDEO REC OUT
LP VIDEO REC OUT
RP PB MODE OUT
RP AFTER REC IN
L:M FULL ERASE ON IN
RAMP IN
RAMP OUT
L:FULL ERASE ON OUT
RP AFTER REC OUT
L:REC ATF IN
SLOW ADJ IN
SLOW ATF
REC ATF IN
L:MP/H:ME OUT
REC PCM CARRIER OUT
REC PCM CARRIER IN
IC601 BU3707F 4 HEAD LOGIC CONTROL
D202 1S2837
Q205 DTC144EK SP/LP SW
IC203 (3/3) TC4053BF STILL SW
IC203 (1/3) TC4053BF PAUSE SW
RV203: STILL 1
RV204: STILL 2
IC204 SN74HC00NS PCM ATF TIMING CONTROL
Q210 DTC144EK ATF HOLD SW
Q209 DTA144EK PCM ATF SW
D201 1S2837
STILL ID OUT
IC202 (2/4) μPC324G2
IC202 (1/4) μPC324G2
STILL ID AMP
IC202 (3/4) μPC324G2
IC202 (4/4) μPC324G2
SLOW BIAS AMP
Q206 DTA144EK
Q207 DTA144EK
PCM ATF SW
Q208 2SC1623-L6 PCM BUFFER
Q201 2SC1623 Y RF BUFFER
Q202 2SA812 LPF
IC201 CXA1042M ATF SERVO
RV201: ATF BPF BALANCE
Q401 2SA812
Q402 2SC1623
Q405 2SC1623
Q403 2SC1623
Q404 2SA812
Q406 2SA812
Q407 2SC1623
Q408 2SA812
HI BAND DETECTOR
Q409 2SC1623
Q410 2SC1623
Q411 2SC1623
AGC AMP
Q507 DTA144EK GAIN SW
Q505 2SC1623
Q506 2SC1623
REC ATF AMP
Q508 DTA144EK REC ATF SW
Q503 DTA144EK GAIN SW
Q502 2SC1623
Q504 2SC1623
PCM/ATF MIX
A
B
C
D
E
F
G
H

NOTE:
The ⚠-mar
Replace on

SE-1

1-630-906-1
EVO-9800P


IC604 μPC324G2 (1/4), (2/4), (3/4) RF PK AMP
Q604 2SB1114
Q605 2SC1623
ATF +5V REG
IC604 (4/4) μPC324G2 LPF
ATF +5V
PS601 ICP-N15
+9V
D203 RD5.1M-B3
TP206
TP601
TP203
TP204
IC601 BU3707F 4 HEAD LOGIC CONTROL
D202 1S2837
Q205 DTC144EK SP/LP SW
IC203 (3/3) TC4053BF STILL SW
RV203:STILL 1
RV204:STILL 2
IC202 (2/4) μPC324G2
IC202 (1/4) μPC324G2
STTIL ID AMP
IC202 (3/4) μPC324G2
IC202 (4/4) μPC324G2
SLOW BIAS AMP
Q507 DTA144EK GAIN SW
Q505 2SC1623
Q506 2SC1623
REC ATF AMP
Q508 DTA144EK REC ATF SW
Q503 DTA144EK GAIN SW
Q502 2SC1623
Q504 2SC1623
PCM/ATF MIX
L601 10μH
L501 10μH
+5V
RF PK OUT 1/3
STTIL ID OUT 1/3
SLOW ADJ IN 2/3
SLOW ATF 2/3
SV +5V IN 2/3
GND 907-8 DC. 001-5
GND 003-15 MD. 814-15
GND 004-3 IG. 004-3
GND 004-12 IG. 004-12
GND 004-13 IG. 004-13
GND 011-8 FR. 002-8
GND 011-26 FR. 002-26
H CHG OUT 905-3 DI-12. 551-3
H CHG OUT 011-14 FR. 002-14
SP PEAK DET OUT 905-8 DI-12. 551-2
LP PEAK DET OUT 905-9 DI-12. 551-1
D RF SW PULSE OUT 003-3 MD. 814-3
RP SW PULSE OUT 011-15 FR. 002-15
LP PCM REC OUT 011-16 FR. 002-16
SP PCM REC OUT 011-17 FR. 002-17
V. I. SW PULSE OUT 004-5 IG. 004-5
L:SP CH SHORT OUT 011-21 FR. 002-21
L:LP CH SHORT OUT 011-22 FR. 002-22
HHDL OUT 004-14 IG. 004-14
SP VIDEO REC OUT 011-19 FR. 002-19
LP VIDEO REC OUT 011-18 FR. 002-18
RP PB MODE OUT 011-20 FR. 002-20
RP AFTER REC IN 1/3
L:M FULL ERASE ON IN 003-1 MD. 814-1
RAMP IN 003-6 MD. 814-6
RAMP OUT 011-25 FR. 002-25
L:FULL ERASE ON OUT 011-24 FR. 002-24
RP AFTER REC OUT 011-13 FR. 002-13
L:REC ATF IN 005-16 IG. 005-16
REC ATF IN 005-18 IG. 005-18
GND 005-17 IG. 005-17
L:MP/H:ME OUT 011-23 FR. 002-23
REC PCM CARRIER OUT 011-9 FR. 002-9
GND 011-10 FR. 002-10
REC PCM CARRIER IN 003-9 MD. 814-9
GND 003-8 MD. 814-8


CN005
CN007
SE. 005-1 1 DCD IN — DCD OUT 18 HK. 101-18
SE. 005-2 2 HD INSERT IN — HD INSERT OUT 17 HK. 101-17
SE. 005-3 3 DUB AREA IN — DUB AREA OUT 16 HK. 101-16
SE. 005-4 4 VIDEO MUTE IN — SEL 1 OUT 15 HK. 101-15
SE. 005-5 5 JOG VD IN — SEL 2 OUT 14 HK. 101-14
SE. 005-6 6 REF VIDEO OUT — REF VIDEO IN 13 HK. 101-13
SE. 005-7 7 JOG IN — L:AFM STEREO OUT 12 HK. 101-12
SE. 005-8 8 L:AFM STEREO IN — H:SP/L:LP OUT 11 HK. 101-11
SE. 005-9 9 —— — MPHG OUT 10 HK. 101-10
SE. 005-10 10 L:AGC FAST IN — H:ME/L:MP OUT 9 HK. 101-9
SE. 005-11 11 VIDEO PB MODE IN — HK OUT 8 HK. 101-8
SE. 005-12 12 H:SP/L:LP IN — L:REC ATF IN 7 HK. 101-7
SE. 005-13 13 MPHG IN — GND 6 HK. 101-6
SE. 005-14 14 H:ME/L:MP IN — REC ATF IN 5 HK. 101-5
SE. 005-15 15 HK IN — GND 4 HK. 101-4
SE. 005-16 16 L:REC ATF OUT — REC AFM CARRIER OUT 3 HK. 101-3
SE. 005-17 17 GND — GND 2 HK. 101-2
SE. 005-18 18 REC ATF OUT — REC VIDEO RF IN 1 HK. 101-1
SE. 005-19 19 GND
SE. 005-20 20 REC AMP CARRIER IN
SE. 005-21 21 GND
SE. 005-22 22 REC VIDEO RF OUT
CN004
CN006
SE. 004-1 1 GND — GND 18 HK. 102-18
SE. 004-2 2 PB VIDEO RF IN — PB VIDEO RF OUT 17 HK. 102-17
SE. 004-3 3 GND — GND 16 HK. 102-16
SE. 004-4 4 PB RF AGC OUT — PB RF AGC IN 15 HK. 102-15
SE. 004-5 5 V. I. SW PULSE IN — V. I. SW PULSE OUT 14 HK. 102-14
SE. 004-6 6 COMPOSITE SYNC OUT — COMPOSITE SYNC IN 13 HK. 102-13
SE. 004-7 7 —— — VIDEO MUTE OUT 12 HK. 102-12
SE. 004-8 8 —— — JOG OUT 11 HK. 102-11
SE. 004-9 9 —— — L:AGC FAST OUT 10 HK. 102-10
SE. 004-10 10 REG +5V (A) IN — VIDEO PB MODE OUT 9 HK. 102-9
SE. 004-11 11 REG +5V (A) IN — REG +5V (A) OUT 8 HK. 102-8
SE. 004-12 12 GND — REG +5V (A) OUT 7 HK. 102-7
SE. 004-13 13 GND — GND 6 HK. 102-6
SE. 004-14 14 HHDL IN — GND 5 HK. 102-5
SE. 004-15 15 C MUTE IN — JOG VD OUT 4 HK. 102-4
SE. 004-16 16 REG +9V (A) IN — HHDL OUT 3 HK. 102-3
SE. 004-17 17 SEL 1 IN — C MUTE OUT 2 HK. 102-2
SE. 004-18 18 SEL 2 IN — REG +9V (A) OUT 1 HK. 102-1
R044 1k
R099 1k
C026 0.01 :F
C027 0.01 :F
C024 0.01 :F
C025 0.01 :F

IG-4

1-630-904-14(1)
EVO-9800
EVO-9800P

NOTE:
The ⚠-marked components are critical to sefety.
Replace only with same components as specified.

SE-10P(3/3)

1-630-906-14(1)
EVO-9800P

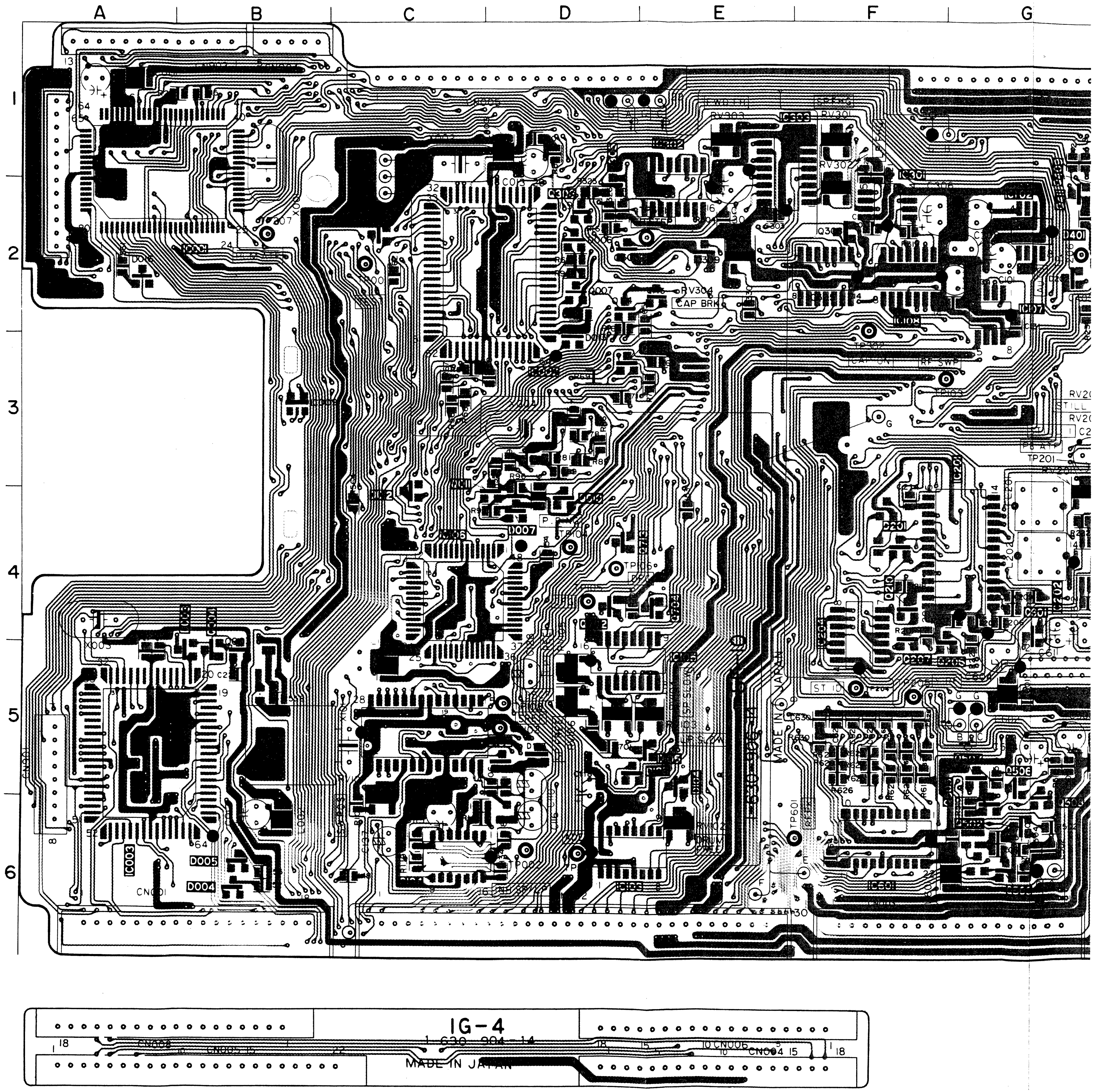
SE-10P ; SERVO, SYSTEM CONTROL
IG-4 ; TERMINAL

SE-10P(1-630-906-14)C

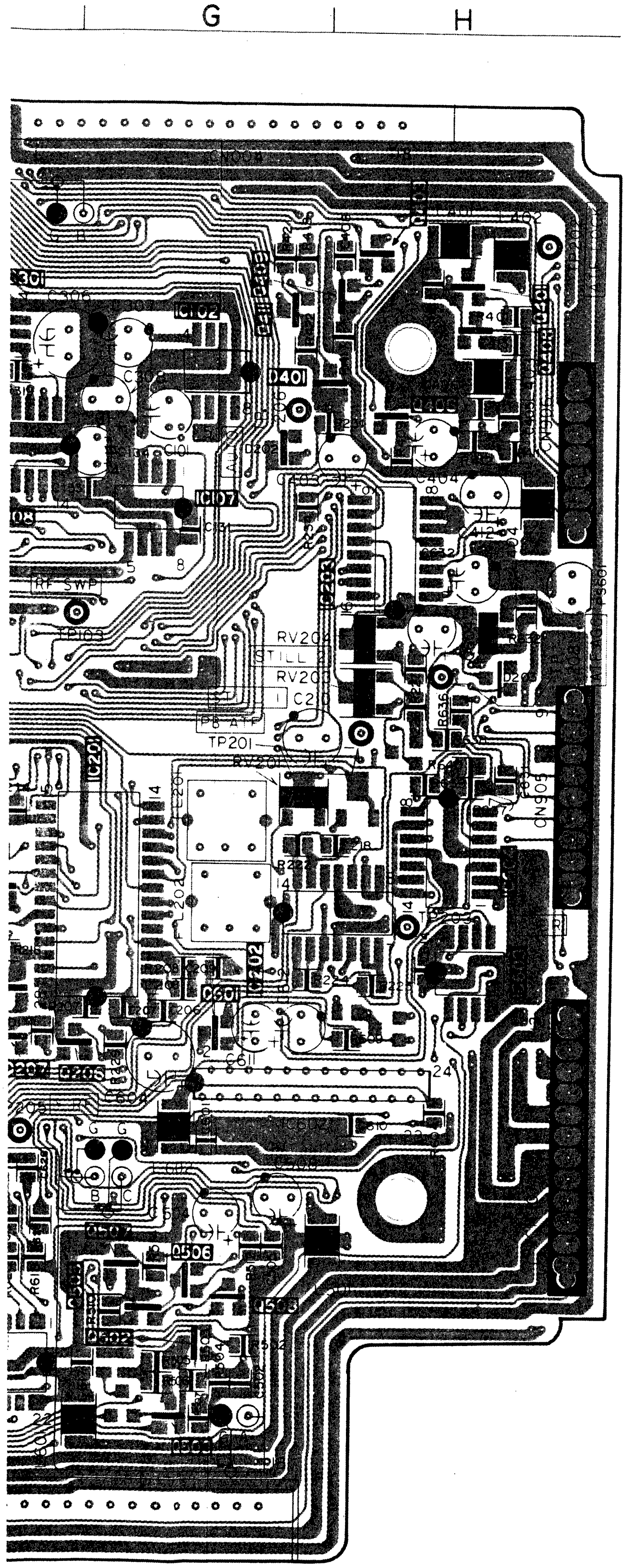
CN001	A-6	Q003	B-5	TP108	D-5
CN002	D-6	Q004	B-5	TP201	H-3
CN003	G-6	Q007	D-2	TP202	H-1
CN004	G-1	Q009	D-3	TP203	H-4
CN005	D-1	Q010	D-4	TP204	F-5
CN901	A-5	Q011	C-4	TP205	F-5
CN902	A-1	Q018	C-2	TP206	G-2
CN903	A-1	Q114	D-2	TP207	B-2
CN904	B-1	Q203	H-3	TP208	H-3
CN905	H-4	Q204	H-3	TP301	E-2
CN906	H-2	Q206	F-5	TP302	F-3
CN907	H-5	Q207	F-5	TP601	F-6
		Q210	F-4		
D003	B-5	Q303	D-2	X001	B-2
D004	B-6	Q305	D-2	X002	C-1
D005	B-6	Q306	D-2	X003	A-4
D006	D-2	Q309	E-2	X004	D-3
D007	D-4	Q401	H-2	X101	C-5
D012	C-4	Q403	H-1		
D013	D-3	Q406	H-2		
D016	A-2	Q408	H-2		
D101	D-6	Q409	G-2		
D102	D-5	Q411	G-2		
D104	E-5	Q502	G-6		
D105	E-5	Q503	G-6		
D106	E-5	Q505	G-6		
D201	F-4	Q506	G-5		
D202	G-2	Q507	G-5		
D401	G-2	Q508	G-6		
		Q601	G-4		
FL201	G-4	Q604	H-3		
FL202	G-4	Q702	D-4		
		Q704	E-4		
IC001	B-2	Q713	D-4		
IC002	D-2				
IC003	A-5	RV101	C-6		
IC009	B-3	RV102	E-6		
IC101	C-5	RV103	E-5		
IC102	G-2	RV104	D-5		
IC103	D-6	RV105	D-5		
IC104	C-6	RV106	D-5		
IC105	D-5	RV201	G-4		
IC106	C-4	RV202	H-4		
IC107	G-2	RV203	H-3		
IC108	F-2	RV204	H-3		
IC201	G-4	RV301	F-1		
IC202	G-4	RV302	F-2		
IC203	H-3	RV303	E-1		
IC204	F-5	RV304	E-2		
IC301	F-2				
IC302	E-2	TP001	C-2		
IC303	E-1	TP002	D-6		
IC305	F-2	TP101	D-6		
IC601	F-6	TP102	D-5		
IC602	G-5	TP103	F-3		
IC603	H-4	TP104	D-4		
IC604	H-4	TP105	D-4		
		TP106	D-4		
PS601	H-3	TP107	C-5		

SE-10P(1-630-906-14)S

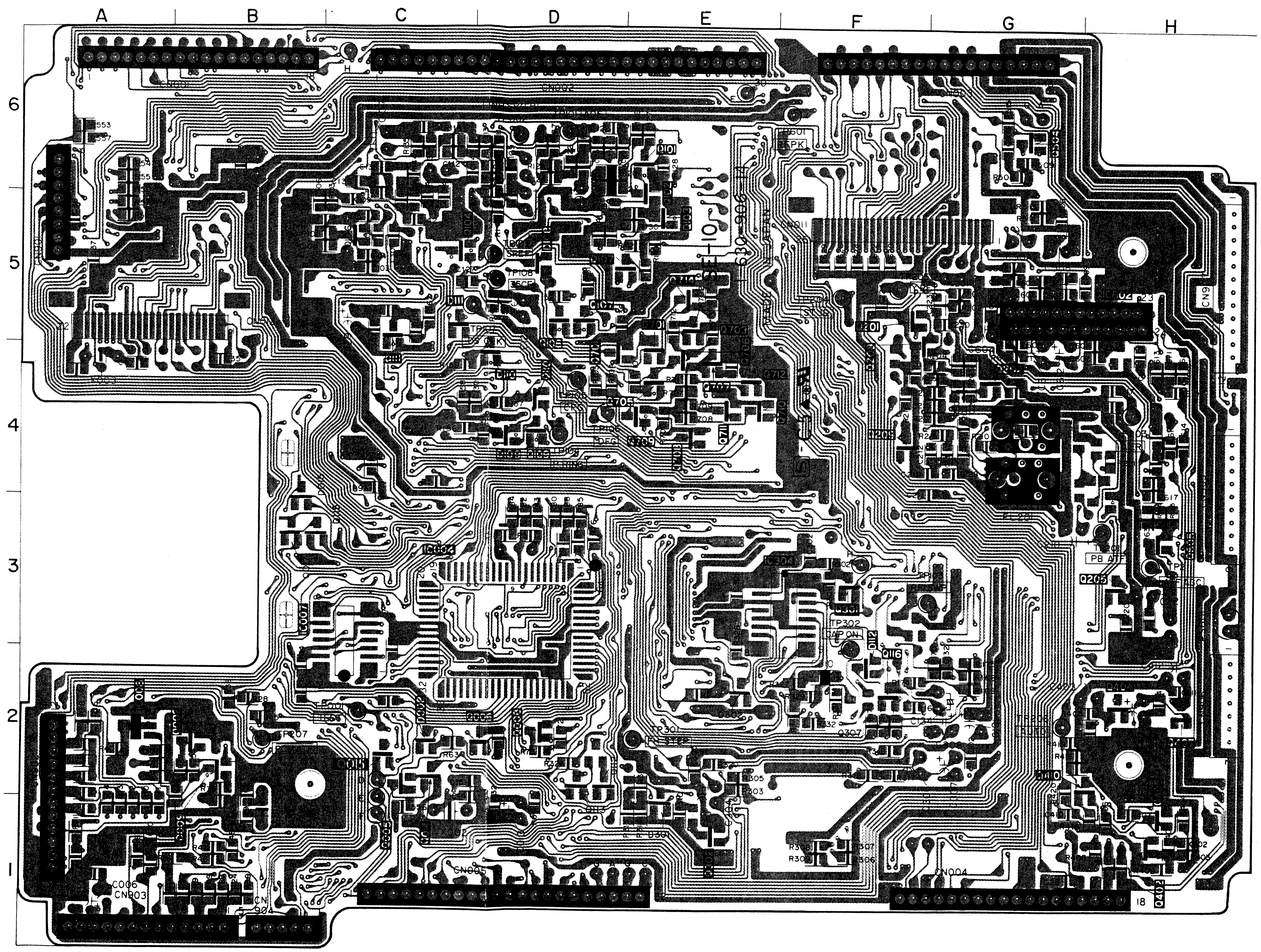
CN011	F-5	Q605	H-3
CN012	B-5	Q701	D-4
D008	C-2	Q703	E-5
D009	B-2	Q705	E-4
D010	B-2	Q706	E-4
D015	B-4	Q707	E-4
D107	D-5	Q708	E-4
D108	D-5	Q709	E-4
D109	D-4	Q710	E-4
D110	D-4	Q711	E-4
D111	C-5	Q712	E-4
D112	F-2	Q714	E-5
D115	C-5		
D301	E-1		
D302	E-2		
D701	E-5		
IC004	D-3		
IC007	C-3		
IC008	A-2		
IC304	F-3		
Q002	B-2		
Q005	C-2		
Q006	D-2		
Q008	D-2		
Q014	C-2		
Q015	C-2		
Q017	B-5		
Q101	E-6		
Q102	E-6		
Q103	E-5		
Q104	C-5		
Q106	C-5		
Q107	D-5		
Q108	D-5		
Q109	D-4		
Q110	D-4		
Q111	C-5		
Q112	D-2		
Q113	D-2		
Q116	F-2		
Q201	F-5		
Q202	G-4		
Q203	H-3		
Q205	H-3		
Q208	F-5		
Q209	F-4		
Q211	H-4		
Q301	F-3		
Q302	E-1		
Q304	D-2		
Q307	F-2		
Q402	H-1		
Q404	H-2		
Q405	H-1		
Q407	H-2		
Q410	H-2		
Q504	G-6		



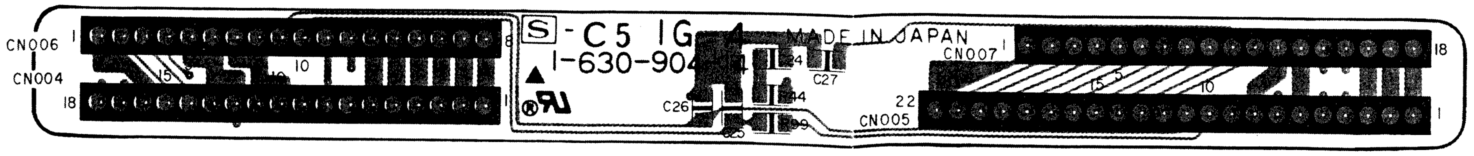
IG-4 —COMPONENT SIDE—
1-630-904-14 (1)
EVO-9800P


G
H
RF SWP
STILL
PB ATF
TP201
RV204
IC102
IC107
Q401
CN301

SE-1OP —COMPONENT SIDE—
1-630-906-14(1)
EVO-9800P

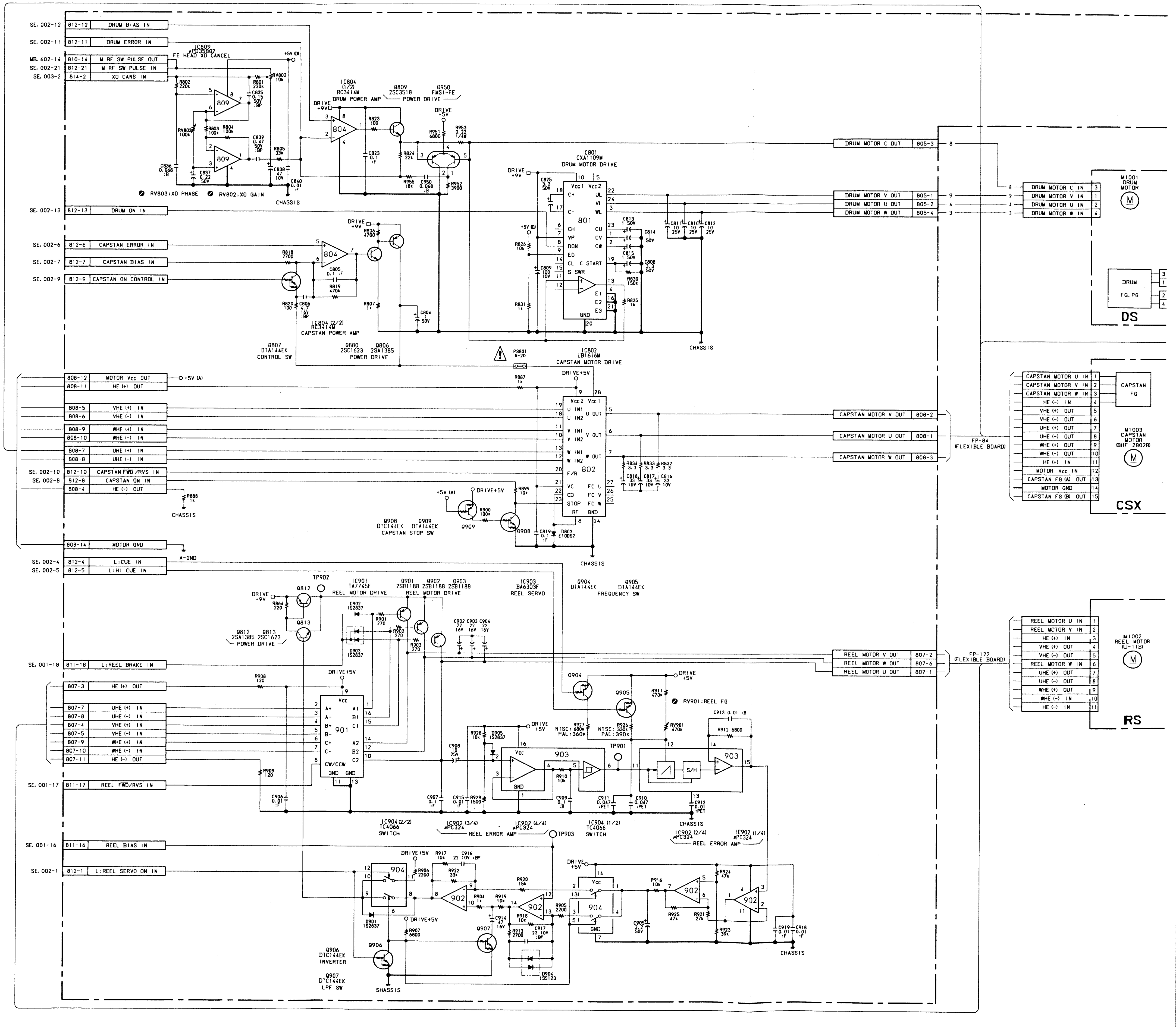

A
B
C
D
E
F
G
H
1
2
3
4
5
6
CN001
CN002
CN003
CN004
CN005
CN006
CN903
CN904
SE-10 1-630-906
TP301
FF STEP
TP302
CAPON
PB ATF
IC004
IC007
18

SE-1OP —SOLDERING SIDE—
1-630-906-14(1)
EVO-9800P

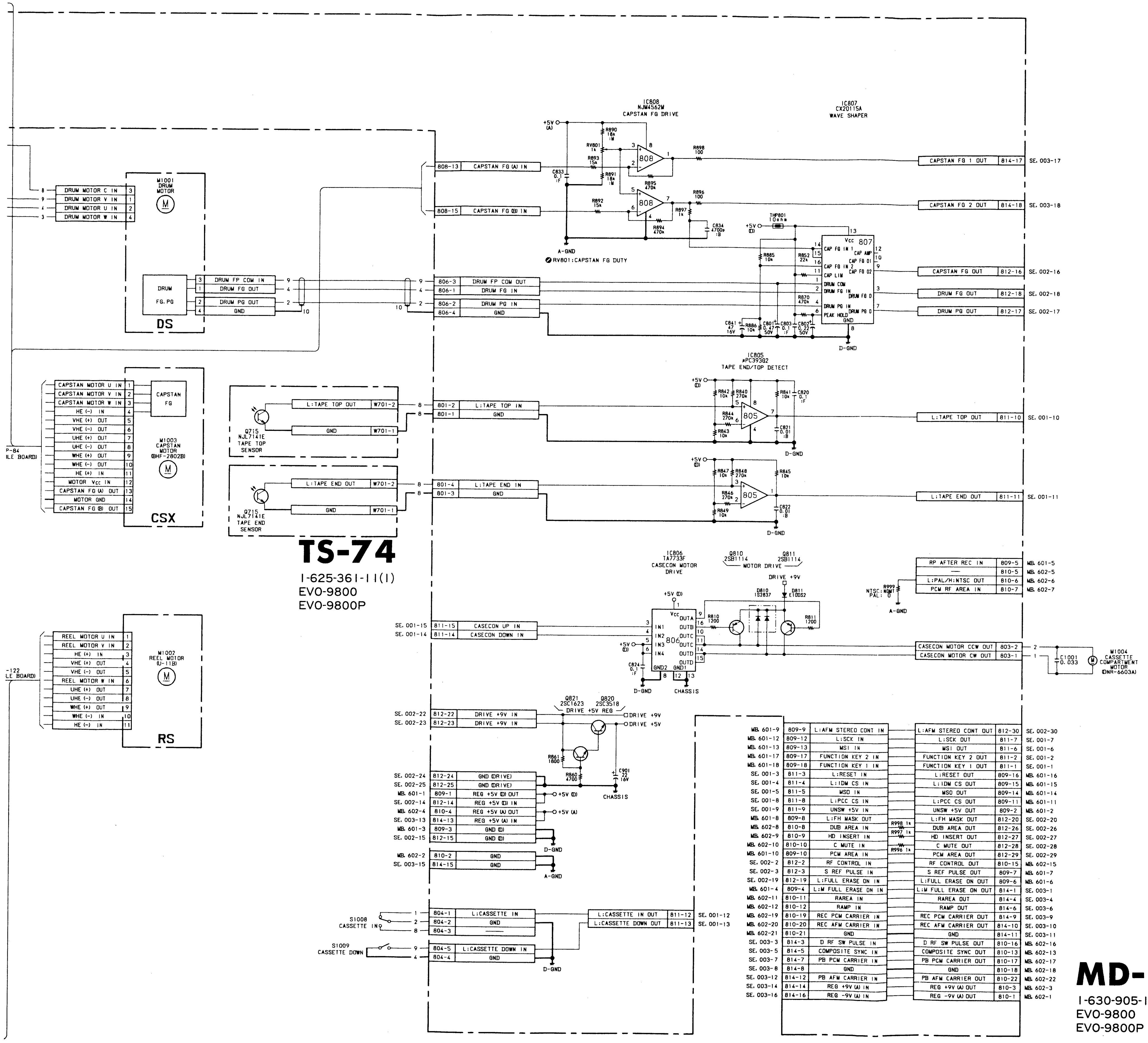

CN006
CN004
CN007
CN005
S -C5 IG-4 MADE IN JAPAN
1-630-904-14
C26
C27
1
18
22

IG-4 —SOLDERING SIDE—
1-630-904-14 (1)
EVO-9800P

-23P; DRUM/CAPSTAN/REEL MOTOR DRIVE
-74; TAPE TOP/END SENSOR


DRUM BIAS IN
DRUM ERROR IN
M RF SW PULSE OUT
XO CANS IN
IC809 μPC358G2 FE HEAD XO CANCEL
IC804 (1/2) RC3414M DRUM POWER AMP
Q809 2SC3518
Q950 FMS1-FE POWER DRIVE
RV803:XO PHASE
RV802:XO GAIN
DRUM ON IN
CHASSIS
IC801 CXA1109M DRUM MOTOR DRIVE
DRUM MOTOR C OUT
DRUM MOTOR V OUT
DRUM MOTOR U OUT
DRUM MOTOR W OUT
M1001 DRUM MOTOR
DRUM FG, PG
DS
CAPSTAN ERROR IN
CAPSTAN BIAS IN
CAPSTAN ON CONTROL IN
IC804 (2/2) RC3414M CAPSTAN POWER AMP
Q807 DTA144EK CONTROL SW
Q880 2SC1623
Q806 2SA1385 POWER DRIVE
PS801 N-20
IC802 LB1616M CAPSTAN MOTOR DRIVE
MOTOR Vcc OUT
HE (+) OUT
VHE (+) IN
VHE (-) IN
WHE (+) IN
WHE (-) IN
UHE (+) IN
UHE (-) IN
CAPSTAN FWD/RVS IN
CAPSTAN ON IN
HE (-) OUT
CAPSTAN MOTOR V OUT
CAPSTAN MOTOR U OUT
CAPSTAN MOTOR W OUT
FP-84 (FLEXIBLE BOARD)
CAPSTAN FG
M1003 CAPSTAN MOTOR (BHF-2802B)
CSX
Q908 DTC144EK
Q909 DTA144EK CAPSTAN STOP SW
MOTOR GND
A-GND
L:CUE IN
L:HI CUE IN
IC901 TA7745F REEL MOTOR DRIVE
Q901 2SB1188
Q902 2SB1188
Q903 2SB1188 REEL MOTOR DRIVE
IC903 BA6303F REEL SERVO
Q904 DTA144EK
Q905 DTA144EK FREQUENCY SW
Q812 2SA1385
Q813 2SC1623 POWER DRIVE
L:REEL BRAKE IN
REEL MOTOR V OUT
REEL MOTOR W OUT
REEL MOTOR U OUT
FP-122 (FLEXIBLE BOARD)
M1002 REEL MOTOR (J-11B)
RS
RV901:REEL FG
NTSC:680k PAL:360k
NTSC:330k PAL:390k
REEL FWD/RVS IN
IC904 (2/2) TC4066 SWITCH
IC902 (3/4) μPC324
IC902 (4/4) μPC324 REEL ERROR AMP
IC904 (1/2) TC4066 SWITCH
IC902 (2/4) μPC324
IC902 (1/4) μPC324 REEL ERROR AMP
REEL BIAS IN
L:REEL SERVO ON IN
Q906 DTC144EK INVERTER
Q907 DTC144EK LPF SW
D904 1SS123
D901 1S2837
TP901
TP902
TP903

NOTE:
The ⚠-marked components are critical to sefety.
Replace only with same components as specified.


IC808 NJM4562M CAPSTAN FG DRIVE
IC807 CX20115A WAVE SHAPER
IC805 μPC393G2 TAPE END/TOP DETECT
IC806 TA7733F CASECON MOTOR DRIVE
Q810 2SB1114 Q811 2SB1114 MOTOR DRIVE
Q821 2SC1623 Q820 2SC3518 DRIVE +5V REG
RV801:CAPSTAN FG DUTY
M1001 DRUM MOTOR
DRUM FG.PG
DS
CAPSTAN FG
M1003 CAPSTAN MOTOR (BHF-2802B)
CSX
M1002 REEL MOTOR (EJ-11B)
RS
Q715 NJL7141E TAPE TOP SENSOR
Q715 NJL7141E TAPE END SENSOR
M1004 CASSETTE COMPARTMENT MOTOR (DNR-6603A)
S1008 CASSETTE IN
S1009 CASSETTE DOWN
CAPSTAN FG 1 OUT
CAPSTAN FG 2 OUT
CAPSTAN FG OUT
DRUM FG OUT
DRUM PG OUT
L:TAPE TOP OUT
L:TAPE END OUT
CASECON MOTOR CCW OUT
CASECON MOTOR CW OUT
L:CASSETTE IN OUT
L:CASSETTE DOWN OUT
A-GND
D-GND
CHASSIS
TS-74
1-625-361-11(1)
EVO-9800
EVO-9800P
MD-23/P
1-630-905-14(1)
EVO-9800
EVO-9800P

MD-23P, TS-74

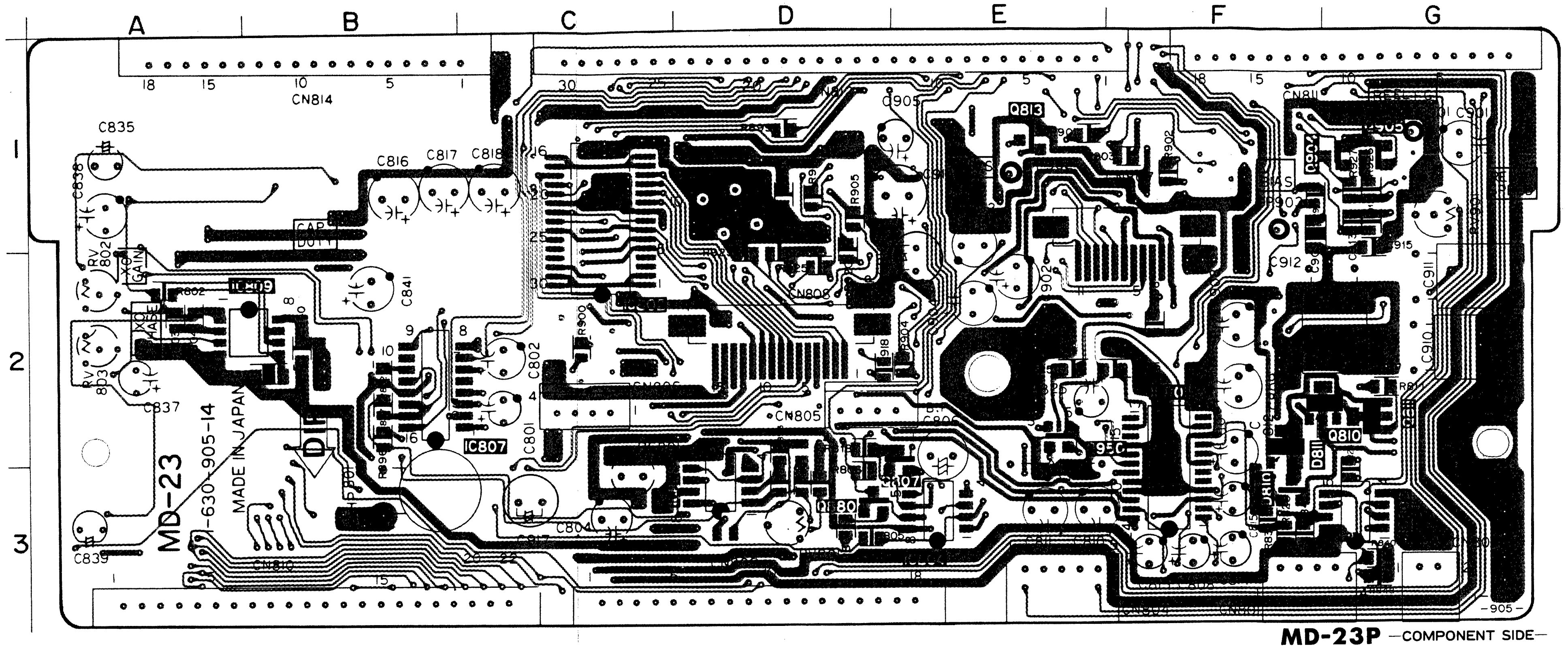
MD-23P; DRUM/CAASTAN/REEL MOTOR DRIVE
TS-74; TAPE POP/END SENSOR

MD-23P(1-630-905-14)C

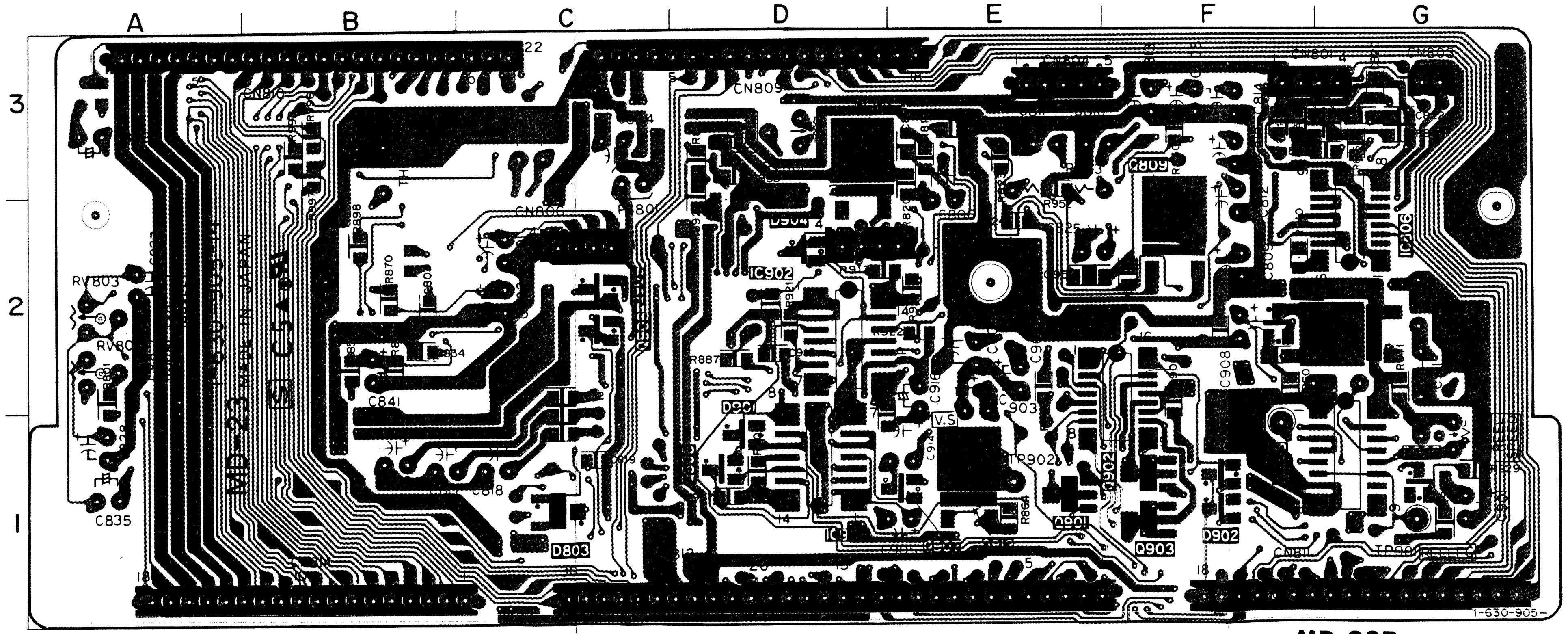
CN801	F-3	PS801	C-3
CN803	G-3		
CN804	E-3	Q807	E-3
CN805	D-2	Q810	G-2
CN806	C-2	Q811	G-2
CN807	F-1	Q813	E-1
CN808	D-2	Q880	D-3
CN809	D-3	Q904	G-1
CN810	B-2	Q905	G-1
CN811	F-1	Q950	E-2
CN812	D-1		
CN814	B-1	RV801	D-3
		RV802	A-2
D810	F-3	RV803	A-2
D811	F-3	RV901	G-1
IC801	F-2	THP801	B-3
IC802	C-1		
IC804	E-3	TP901	G-1
IC805	G-3	TP902	E-1
IC807	B-2	TP903	F-1
IC808	D-3		
IC809	A-2		

MD-23P(1-630-905-14)S

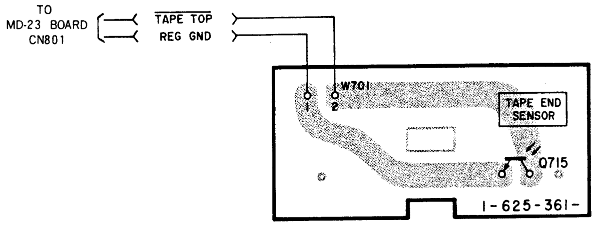
D803	C-1
D901	D-1
D902	F-1
D903	F-1
D904	D-2
D905	G-1
IC806	G-2
IC901	F-2
IC902	D-2
IC903	G-1
IC904	D-1
Q806	D-3
Q809	F-2
Q812	E-1
Q820	G-2
Q821	F-2
Q901	E-1
Q902	F-1
Q903	F-1
Q906	D-1
Q907	E-1
Q908	C-2
Q909	C-2


A
B
C
D
E
F
G
1
2
3
CN814
CN805
CN808
CN810
CN811
IC807
IC809
Q813
Q810
Q880
C835
C837
C839
C816
C817
C818
C841
RV802
RV803
MD-23
1-630-905-14
MADE IN JAPAN
CAP
DUTY
GAIN
-905-

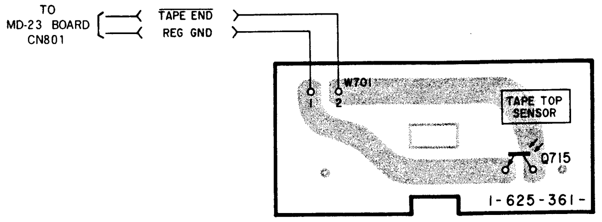
MD-23P —COMPONENT SIDE—
1-630-905-14(1)
EVO-9800P


A
B
C
D
E
F
G
3
2
1
CN810
CN809
CN811
RV803
RV801
C835
C841
C818
D803
IC902
Q809
D902
Q903
TP902
C908
MD-23
1-630-905-14
1-630-905-

MD-23P —SOLDERING SIDE—
1-630-905-14(1)
EVO-9800P


TO
MD-23 BOARD
CN801
TAPE TOP
REG GND
W701
TAPE END
SENSOR
Q715
1-625-361-

TS-74 —SOLDERING SIDE—
1-625-361-11
EVO-9800
EVO-9800P

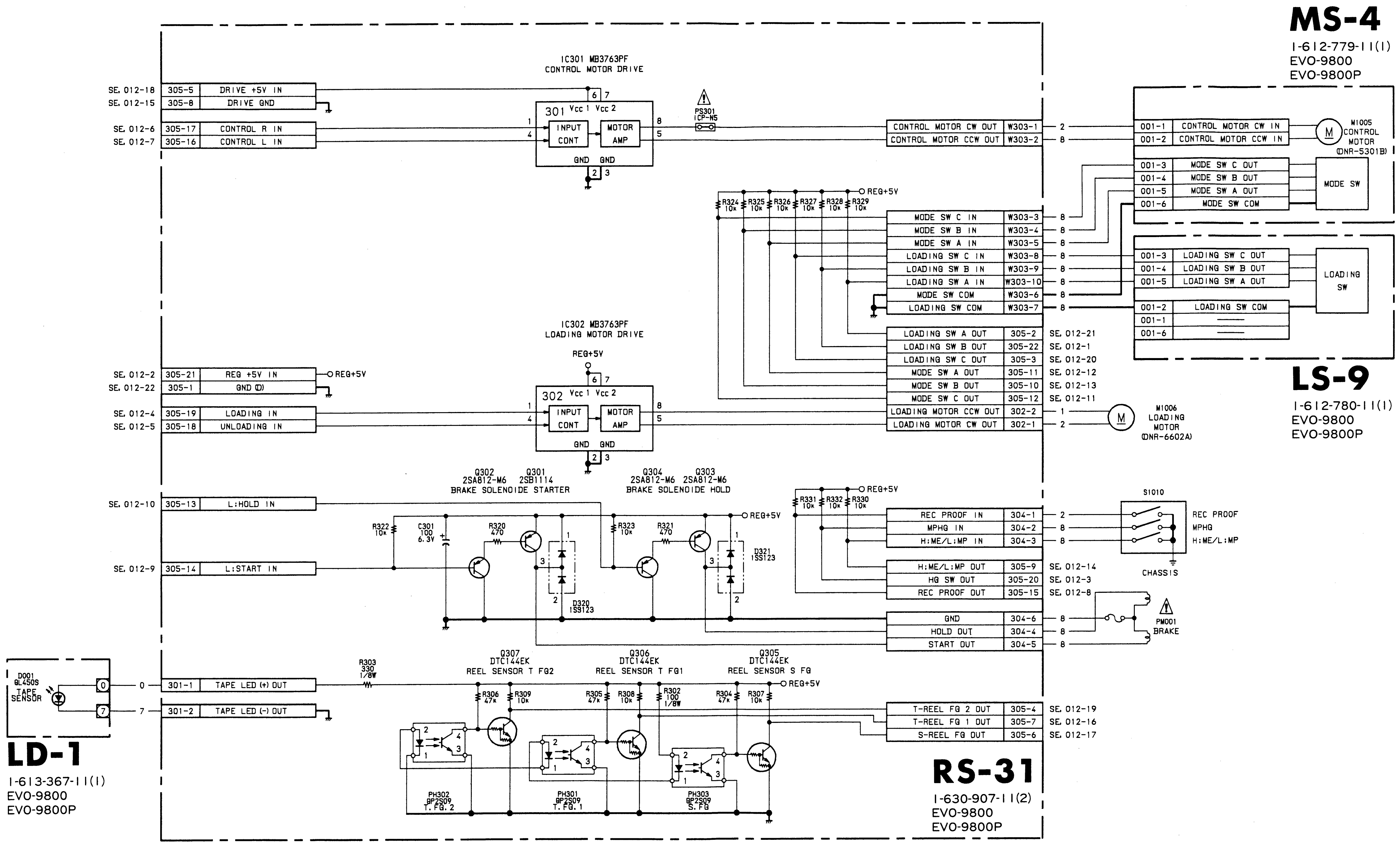

TO
MD-23 BOARD
CN801
TAPE END
REG GND
W701
TAPE TOP
SENSOR
Q715
1-625-361-

TS-74 —SOLDERING SIDE—
1-625-361-11
EVO-9800
EVO-9800P

13-21

RS-31 ; MECHANISM CONTROL
LD-1 ; TAPE SENSOR
LS-9 ; LOADING SWITCH
MS-4 ; MODE SWITCH

RS-3
LD-1

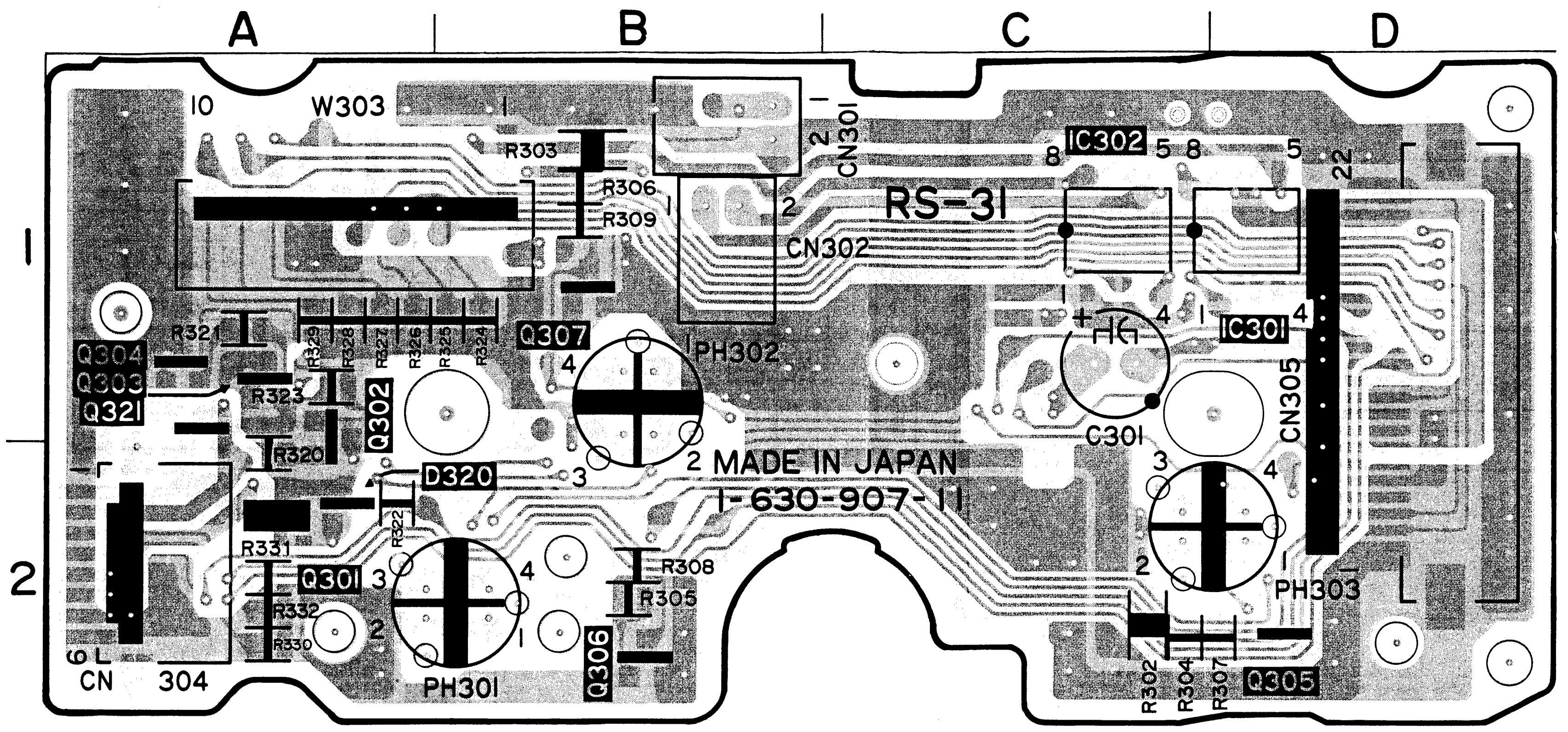

MS-4
1-612-779-11(1)
EVO-9800
EVO-9800P
IC301 MB3763PF
CONTROL MOTOR DRIVE
SE. 012-18
SE. 012-15
SE. 012-6
SE. 012-7
305-5 DRIVE +5V IN
305-8 DRIVE GND
305-17 CONTROL R IN
305-16 CONTROL L IN
301
Vcc 1 Vcc 2
INPUT CONT
MOTOR AMP
GND GND
PS301
ICP-N5
CONTROL MOTOR CW OUT W303-1
CONTROL MOTOR CCW OUT W303-2
001-1 CONTROL MOTOR CW IN
001-2 CONTROL MOTOR CCW IN
M1005
CONTROL MOTOR
(DNR-5301B)
001-3 MODE SW C OUT
001-4 MODE SW B OUT
001-5 MODE SW A OUT
001-6 MODE SW COM
MODE SW
REG+5V
R324 10k
R325 10k
R326 10k
R327 10k
R328 10k
R329 10k
MODE SW C IN W303-3
MODE SW B IN W303-4
MODE SW A IN W303-5
LOADING SW C IN W303-8
LOADING SW B IN W303-9
LOADING SW A IN W303-10
MODE SW COM W303-6
LOADING SW COM W303-7
001-3 LOADING SW C OUT
001-4 LOADING SW B OUT
001-5 LOADING SW A OUT
LOADING SW
001-2 LOADING SW COM
001-1
001-6
LOADING SW A OUT 305-2 SE. 012-21
LOADING SW B OUT 305-22 SE. 012-1
LOADING SW C OUT 305-3 SE. 012-20
MODE SW A OUT 305-11 SE. 012-12
MODE SW B OUT 305-10 SE. 012-13
MODE SW C OUT 305-12 SE. 012-11
LS-9
1-612-780-11(1)
EVO-9800
EVO-9800P
IC302 MB3763PF
LOADING MOTOR DRIVE
SE. 012-2
SE. 012-22
SE. 012-4
SE. 012-5
305-21 REG +5V IN
305-1 GND (D)
305-19 LOADING IN
305-18 UNLOADING IN
302
LOADING MOTOR CCW OUT 302-2
LOADING MOTOR CW OUT 302-1
M1006
LOADING MOTOR
(DNR-6602A)
Q302 2SA812-M6
Q301 2SB1114
BRAKE SOLENOIDE STARTER
Q304 2SA812-M6
Q303 2SA812-M6
BRAKE SOLENOIDE HOLD
SE. 012-10 305-13 L:HOLD IN
SE. 012-9 305-14 L:START IN
R322 10k
C301 100 6.3V
R320 470
R323 10k
R321 470
D320 1SS123
D321 1SS123
R331 10k
R332 10k
R330 10k
REC PROOF IN 304-1
MPHG IN 304-2
H:ME/L:MP IN 304-3
S1010
REC PROOF
MPHG
H:ME/L:MP
CHASSIS
H:ME/L:MP OUT 305-9 SE. 012-14
HG SW OUT 305-20 SE. 012-3
REC PROOF OUT 305-15 SE. 012-8
GND 304-6
HOLD OUT 304-4
START OUT 304-5
PM001
BRAKE
D001
GL450S
TAPE SENSOR
301-1 TAPE LED (+) OUT
301-2 TAPE LED (-) OUT
R303 330 1/8W
Q307 DTC144EK
REEL SENSOR T FG2
Q306 DTC144EK
REEL SENSOR T FG1
Q305 DTC144EK
REEL SENSOR S FG
R306 47k
R309 10k
R305 47k
R308 10k
R302 100 1/8W
R304 47k
R307 10k
T-REEL FG 2 OUT 305-4 SE. 012-19
T-REEL FG 1 OUT 305-7 SE. 012-16
S-REEL FG OUT 305-6 SE. 012-17
PH302 GP2S09 T. FG. 2
PH301 GP2S09 T. FG. 1
PH303 GP2S09 S. FG
LD-1
1-613-367-11(1)
EVO-9800
EVO-9800P
RS-31
1-630-907-11(2)
EVO-9800
EVO-9800P

NOTE:
The ⚠-marked components are critical to sefety.
Replace only with same components as specified.

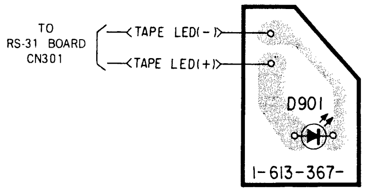
RS-31 ; MECHANISM CONTROL
LD-1 ; TAPE SENSOR

RS-31(1-630-907-11)C

CN301	B-1
CN302	B-1
CN304	A-2
CN305	D-1
D320	A-2
D321	A-1
IC301	D-1
IC302	C-1
PH301	B-2
PH302	B-1
PH303	C-2
Q301	A-2
Q302	A-1
Q303	A-1
Q304	A-1
Q305	D-2
Q306	B-2
Q307	B-1

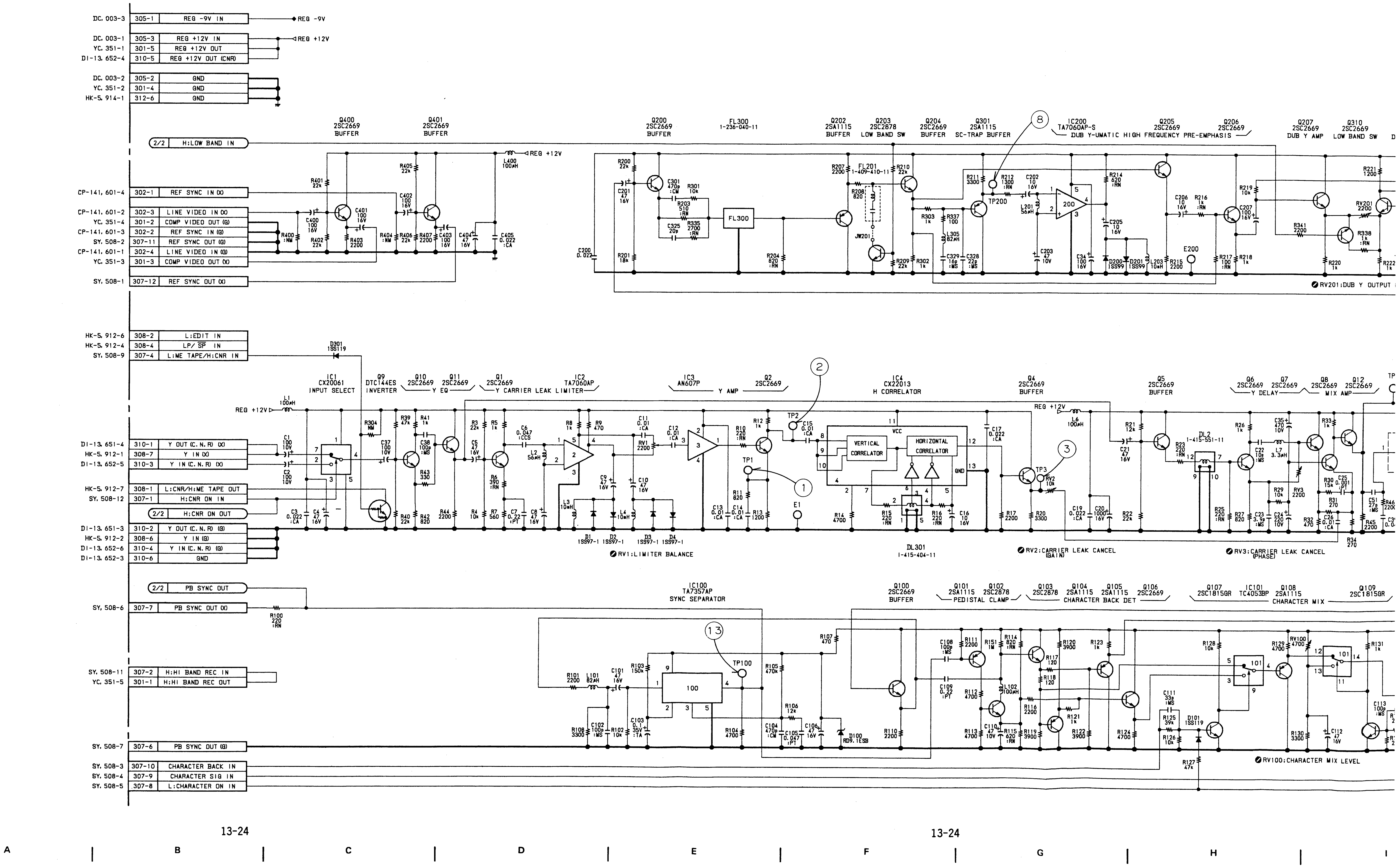

A
B
C
D
1
2
W303
10
R303
R306
R309
CN301
CN302
RS-31
IC302
IC301
CN305
C301
PH302
PH301
PH303
Q307
Q304
Q303
Q321
Q302
Q301
Q306
Q305
D320
R321
R323
R320
R331
R332
R330
R322
R329
R328
R327
R326
R325
R324
R308
R305
R302
R304
R307
CN 304
MADE IN JAPAN
1-630-907-11

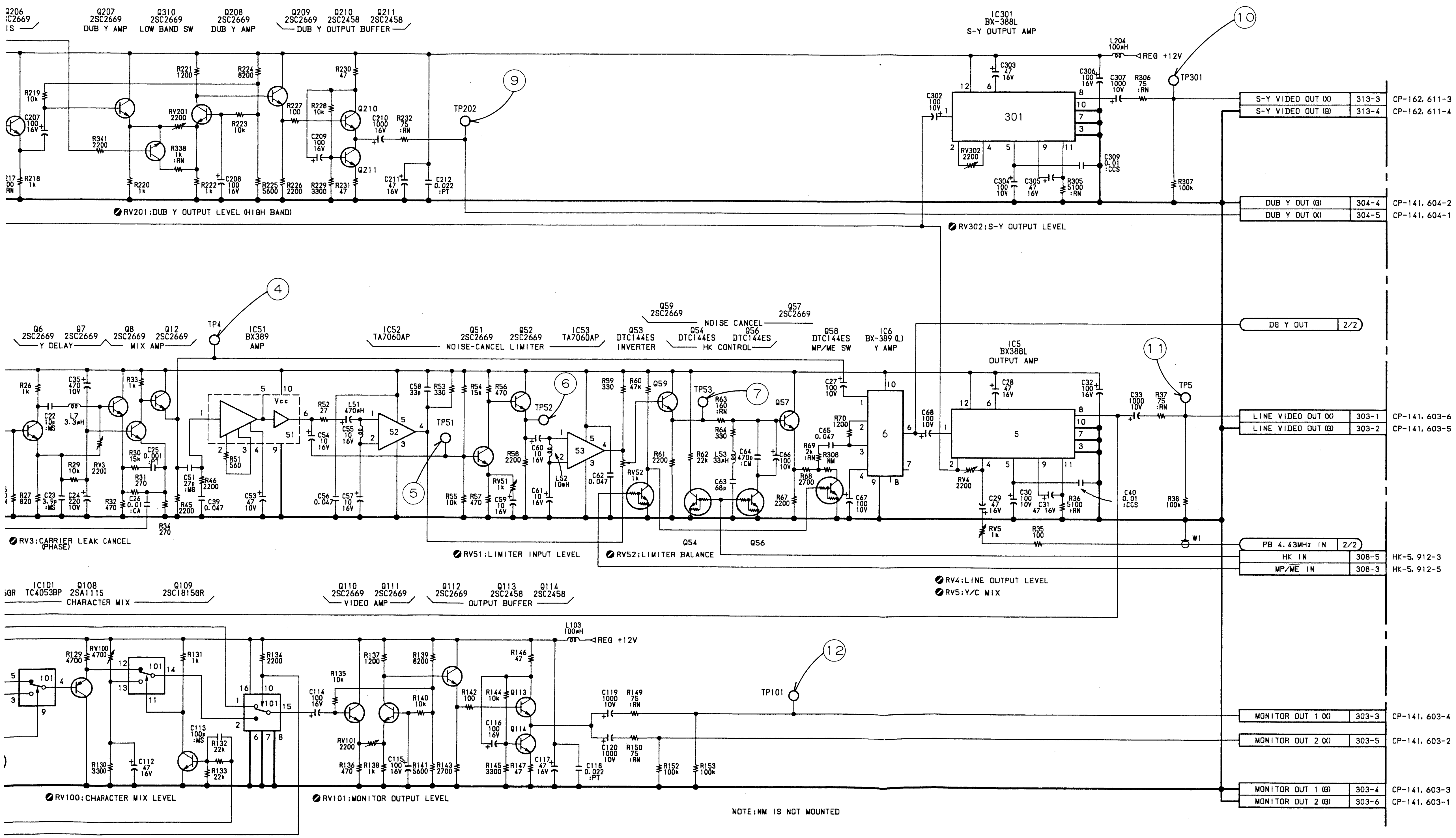
RS-31 —COMPONENT SIDE—
1-630-907-11(1)
EVO-9800
EVO-9800P


TO
RS-31 BOARD
CN301
TAPE LED(-)
TAPE LED(+)
D901
1-613-367-

LD-1
—SOLDERING SIDE—
1-613-367-11
EVO-9800
EVO-9800P

V -30 (1/2); Y INTERFACE


DC, 003-3 305-1 REG -9V IN
REG -9V
DC, 003-1 305-3 REG +12V IN
YC, 351-1 301-5 REG +12V OUT
DI-13, 652-4 310-5 REG +12V OUT (CNR)
REG +12V
DC, 003-2 305-2 GND
YC, 351-2 301-4 GND
HK-5, 914-1 312-6 GND
2/2 H:LOW BAND IN
CP-141, 601-4 302-1 REF SYNC IN (X)
CP-141, 601-2 302-3 LINE VIDEO IN (X)
YC, 351-4 301-2 COMP VIDEO OUT (G)
CP-141, 601-3 302-2 REF SYNC IN (G)
SY, 508-2 307-11 REF SYNC OUT (G)
CP-141, 601-1 302-4 LINE VIDEO IN (G)
YC, 351-3 301-3 COMP VIDEO OUT (X)
SY, 508-1 307-12 REF SYNC OUT (X)
Q400 2SC2669 BUFFER
Q401 2SC2669 BUFFER
L400 100µH
Q200 2SC2669 BUFFER
FL300 1-236-040-11
Q202 2SA1115 BUFFER
Q203 2SC2878 LOW BAND SW
Q204 2SC2669 BUFFER
Q301 2SA1115 SC-TRAP BUFFER
8
IC200 TA7060AP-S
DUB Y-UMATIC HIGH FREQUENCY PRE-EMPHASIS
Q205 2SC2669
Q206 2SC2669
Q207 2SC2669 DUB Y AMP
Q310 2SC2669 LOW BAND SW
FL201 1-409-410-11
JW201
TP200
E200
RV201:DUB Y OUTPUT
HK-5, 912-6 308-2 L:EDIT IN
HK-5, 912-4 308-4 LP/SP IN
SY, 508-9 307-4 L:ME TAPE/H:CNR IN
D301 1SS119
IC1 CX20061 INPUT SELECT
Q9 DTC144ES INVERTER
Q10 2SC2669
Q11 2SC2669
Y EQ
Q1 2SC2669
IC2 TA7060AP
Y CARRIER LEAK LIMITER
IC3 AN607P
Q2 2SC2669
Y AMP
IC4 CX22013 H CORRELATOR
Q4 2SC2669 BUFFER
Q5 2SC2669 BUFFER
Q6 2SC2669
Q7 2SC2669
Y DELAY
Q8 2SC2669
Q12 2SC2669
MIX AMP
REG +12V
L1 100µH
L6 100µH
DI-13, 651-4 310-1 Y OUT (C.N.R) (X)
HK-5, 912-1 308-7 Y IN (X)
DI-13, 652-5 310-3 Y IN (C.N.R) (X)
HK-5, 912-7 308-1 L:CNR/H:ME TAPE OUT
SY, 508-12 307-1 H:CNR ON IN
2/2 H:CNR ON OUT
DI-13, 651-3 310-2 Y OUT (C.N.R) (G)
HK-5, 912-2 308-6 Y IN (G)
DI-13, 652-6 310-4 Y IN (C.N.R) (G)
DI-13, 652-3 310-6 GND
TP1
TP2
TP3
E1
1
2
3
VERTICAL CORRELATOR
HORIZONTAL CORRELATOR
VCC
GND
DL301 1-415-404-11
DL2 1-415-551-11
D1 1SS97-1
D2 1SS97-1
D3 1SS97-1
D4 1SS97-1
RV1:LIMITER BALANCE
RV2:CARRIER LEAK CANCEL (GAIN)
RV3:CARRIER LEAK CANCEL (PHASE)
2/2 PB SYNC OUT
SY, 508-6 307-7 PB SYNC OUT (X)
IC100 TA7357AP SYNC SEPARATOR
13
TP100
Q100 2SC2669 BUFFER
Q101 2SA1115
Q102 2SC2878
PEDISTAL CLAMP
Q103 2SC2878
Q104 2SA1115
Q105 2SA1115
Q106 2SC2669
CHARACTER BACK DET
Q107 2SC1815GR
IC101 TC4053BP
Q108 2SA1115
CHARACTER MIX
Q109 2SC1815GR
SY, 508-11 307-2 H:HI BAND REC IN
YC, 351-5 301-1 H:HI BAND REC OUT
D100 RD9.1ESB
D101 1SS119
SY, 508-7 307-6 PB SYNC OUT (G)
SY, 508-3 307-10 CHARACTER BACK IN
SY, 508-4 307-9 CHARACTER SIG IN
SY, 508-5 307-8 L:CHARACTER ON IN
RV100:CHARACTER MIX LEVEL
A
B
C
D
E
F
G
H
I

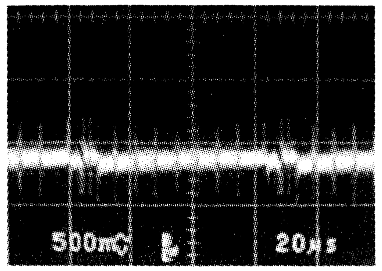

Q207 2SC2669 DUB Y AMP
Q310 2SC2669 LOW BAND SW
Q208 2SC2669 DUB Y AMP
Q209 2SC2669 Q210 2SC2458 Q211 2SC2458 DUB Y OUTPUT BUFFER
IC301 BX-388L S-Y OUTPUT AMP
L204 100μH REG +12V
TP301
TP202
RV201:DUB Y OUTPUT LEVEL (HIGH BAND)
RV302:S-Y OUTPUT LEVEL
S-Y VIDEO OUT (X) 313-3 CP-162, 611-3
S-Y VIDEO OUT (G) 313-4 CP-162, 611-4
DUB Y OUT (G) 304-4 CP-141, 604-2
DUB Y OUT (X) 304-5 CP-141, 604-1
Q6 2SC2669 Q7 2SC2669 Y DELAY
Q8 2SC2669 Q12 2SC2669 MIX AMP
TP4
IC51 BX389 AMP
IC52 TA7060AP
Q51 2SC2669 Q52 2SC2669 NOISE-CANCEL LIMITER
IC53 TA7060AP
Q53 DTC144ES INVERTER
Q59 2SC2669
Q54 DTC144ES Q56 DTC144ES HK CONTROL
NOISE CANCEL
Q57 2SC2669
Q58 DTC144ES MP/ME SW
IC6 BX-389 (L) Y AMP
IC5 BX388L OUTPUT AMP
TP51
TP52
TP53
TP5
DG Y OUT 2/2
LINE VIDEO OUT (X) 303-1 CP-141, 603-6
LINE VIDEO OUT (G) 303-2 CP-141, 603-5
PB 4.43MHz IN 2/2
HK IN 308-5 HK-5, 912-3
MP/ME IN 308-3 HK-5, 912-5
W1
RV3:CARRIER LEAK CANCEL (PHASE)
RV51:LIMITER INPUT LEVEL
RV52:LIMITER BALANCE
RV4:LINE OUTPUT LEVEL
RV5:Y/C MIX
IC101 TC4053BP
Q108 2SA1115
CHARACTER MIX
Q109 2SC1815GR
Q110 2SC2669 Q111 2SC2669 VIDEO AMP
Q112 2SC2669 Q113 2SC2458 Q114 2SC2458 OUTPUT BUFFER
L103 100μH REG +12V
TP101
MONITOR OUT 1 (X) 303-3 CP-141, 603-4
MONITOR OUT 2 (X) 303-5 CP-141, 603-2
MONITOR OUT 1 (G) 303-4 CP-141, 603-3
MONITOR OUT 2 (G) 303-6 CP-141, 603-1
RV100:CHARACTER MIX LEVEL
RV101:MONITOR OUTPUT LEVEL
NOTE:NM IS NOT MOUNTED
④
⑤
⑥
⑦
⑨
⑩
⑪
⑫

VO-30(1/2)

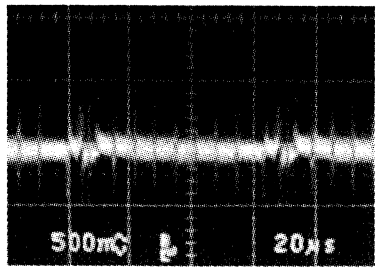
1-635-081-11, 12 (1)
EVO-9800P

VO-30 (1/2)

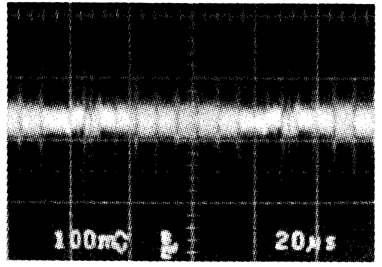
① TP1 EE mode



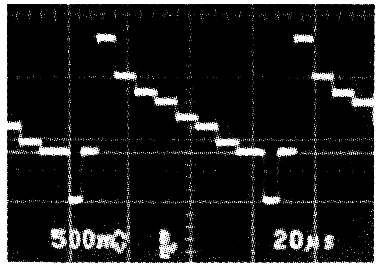
② TP2 EE mode



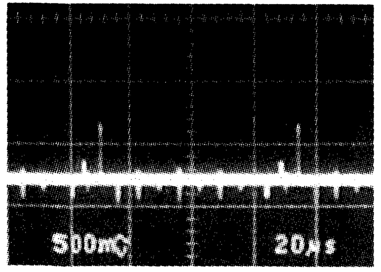
③ TP3 EE mode



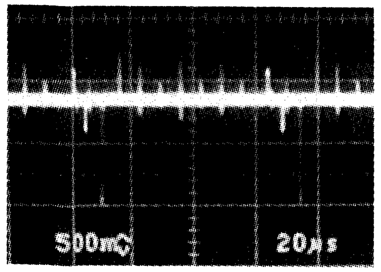
④ TP4 EE mode



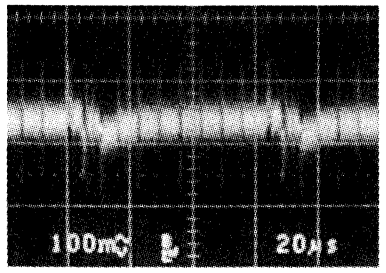
⑤ TP51 EE mode



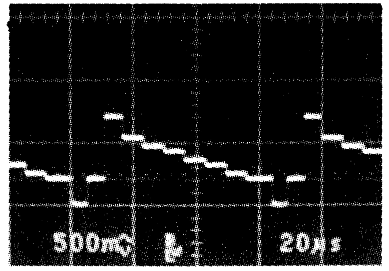
⑥ TP52 EE mode



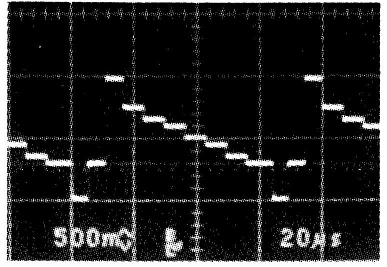
⑦ TP53 EE mode



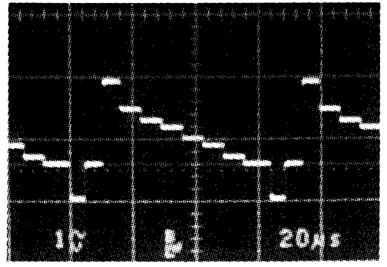
⑧ TP200 EE mode



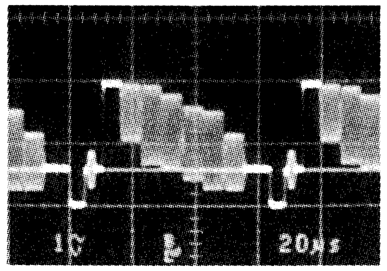
⑨ TP202 EE mode



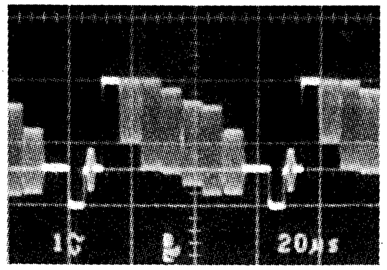
⑩ TP301 EE mode



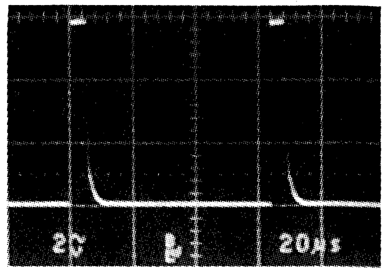
⑪ TP5 EE mode



⑫ TP101 EE mode



⑬ TP100 EE mode



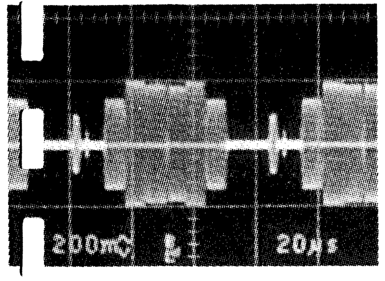
Measurement Condition

- Input Signal : Color Bars
- Cassette Tape : Alignment tape WR5-8CSE
  (Color Bars Signal)

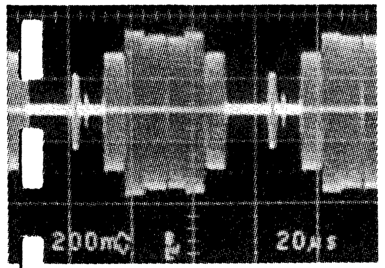
V -30 (2/2); CHROMA INTERFACE

V 30 (2/2)

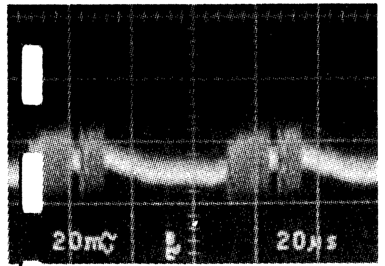
① TP409 EE mode



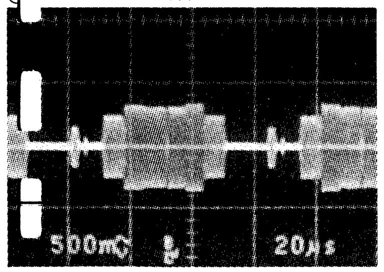
② TP406 EE mode



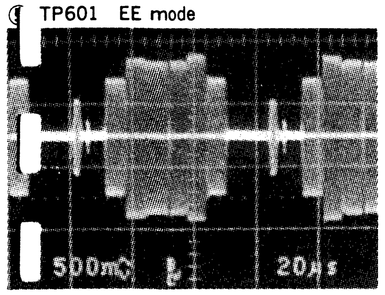
③ TP407 EE mode



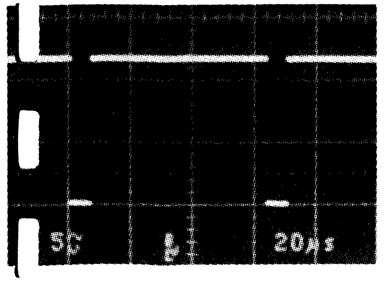
④ TP408 EE mode



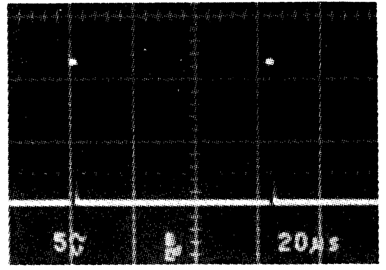
⑤ TP601 EE mode



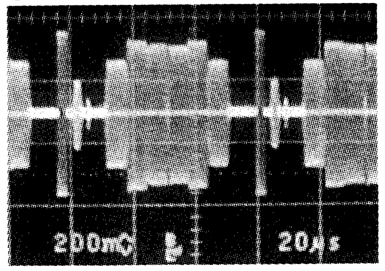
⑥ TP402 EE mode



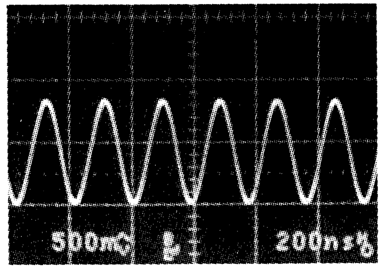
⑦ TP403 EE mode



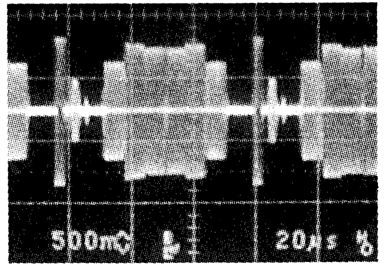
⑧ TP501 EE mode



⑨ TP502 EE mode

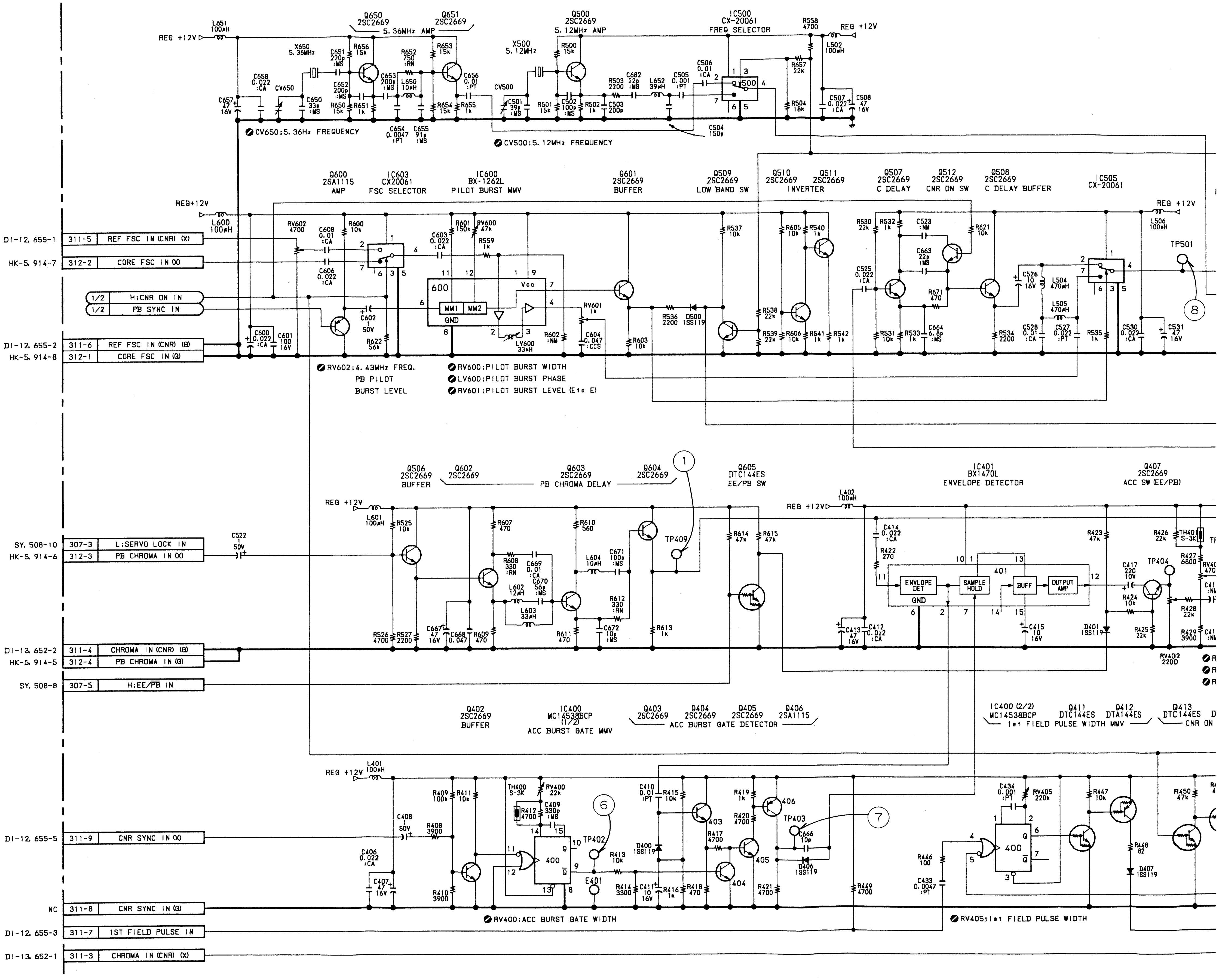


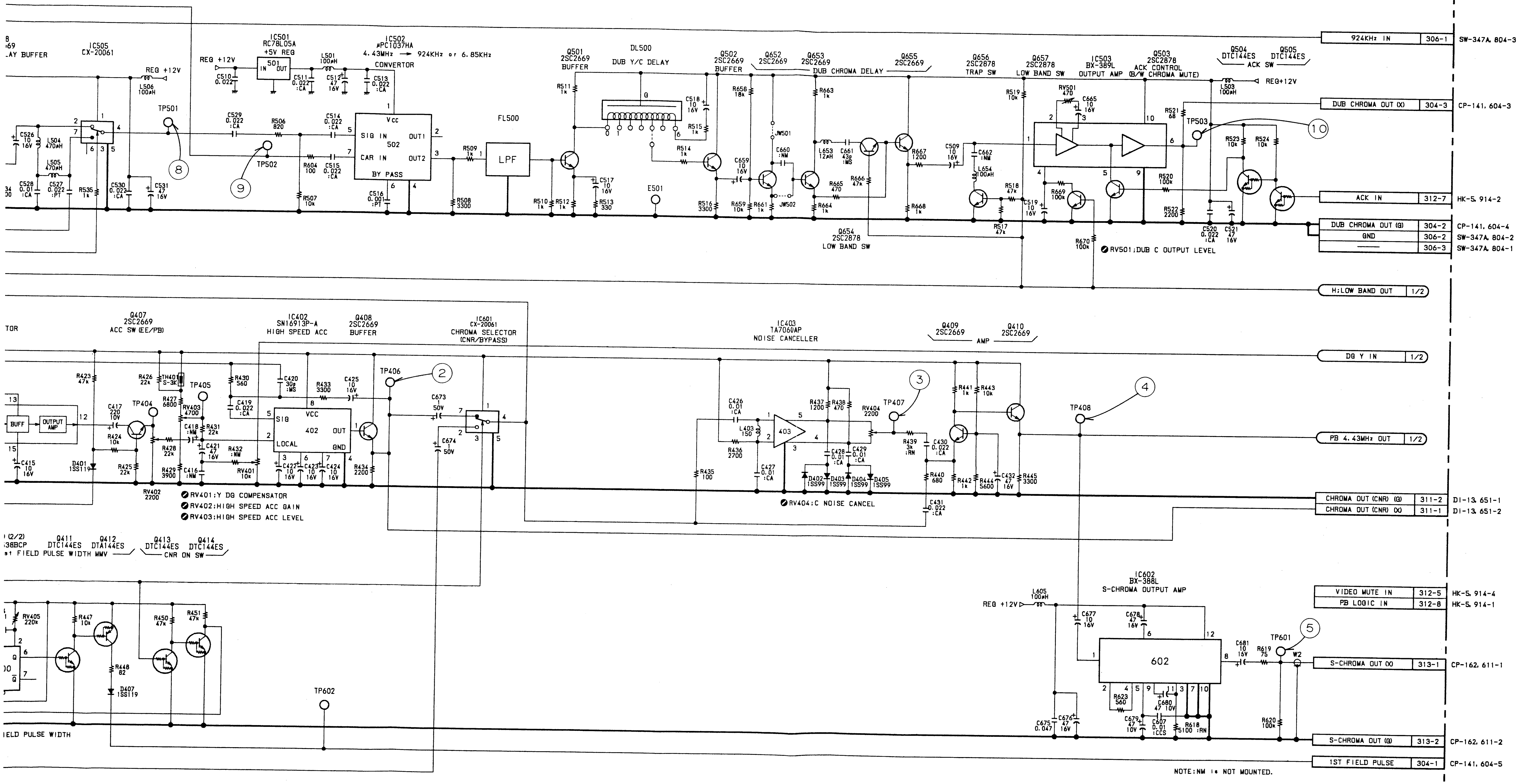
⑩ TP503 EE mode



Measurement Condition

- Input Signal : Color Bars
- Cassette Tape : Alignment tape WR5-8CSE (Color Bars Signal)


Q650 2SC2669
Q651 2SC2669
5.36MHz AMP
Q500 2SC2669
5.12MHz AMP
IC500 CX-20061
FREQ SELECTOR
REG +12V
X650 5.36MHz
X500 5.12MHz
CV650
CV500
CV650;5.36Hz FREQUENCY
CV500;5.12MHz FREQUENCY
Q600 2SA1115 AMP
IC603 CX20061 FSC SELECTOR
IC600 BX-1262L PILOT BURST MMV
Q601 2SC2669 BUFFER
Q509 2SC2669 LOW BAND SW
Q510 2SC2669
Q511 2SC2669
INVERTER
Q507 2SC2669 C DELAY
Q512 2SC2669 CNR ON SW
Q508 2SC2669 C DELAY BUFFER
IC505 CX-20061
TP501
DI-12, 655-1
311-5
REF FSC IN (CNR) (X)
HK-5, 914-7
312-2
CORE FSC IN (X)
1/2
H:CNR ON IN
1/2
PB SYNC IN
DI-12, 655-2
311-6
REF FSC IN (CNR) (G)
HK-5, 914-8
312-1
CORE FSC IN (G)
RV602:4.43MHz FREQ. PB PILOT BURST LEVEL
RV600:PILOT BURST WIDTH
LV600:PILOT BURST PHASE
RV601:PILOT BURST LEVEL (E to E)
MM1
MM2
GND
Vcc
Q506 2SC2669 BUFFER
Q602 2SC2669
Q603 2SC2669
PB CHROMA DELAY
Q604 2SC2669
Q605 DTC144ES EE/PB SW
IC401 BX1470L ENVELOPE DETECTOR
Q407 2SC2669 ACC SW (EE/PB)
TP409
TP404
ENVLOPE DET
SAMPLE HOLD
BUFF
OUTPUT AMP
SY, 508-10
307-3
L:SERVO LOCK IN
HK-5, 914-6
312-3
PB CHROMA IN (X)
DI-13, 652-2
311-4
CHROMA IN (CNR) (G)
HK-5, 914-5
312-4
PB CHROMA IN (G)
SY, 508-8
307-5
H:EE/PB IN
Q402 2SC2669 BUFFER
IC400 MC14538BCP (1/2) ACC BURST GATE MMV
Q403 2SC2669
Q404 2SC2669
Q405 2SC2669
Q406 2SA1115
ACC BURST GATE DETECTOR
IC400 (2/2) MC14538BCP
Q411 DTC144ES
Q412 DTA144ES
1st FIELD PULSE WIDTH MMV
Q413 DTC144ES
CNR ON
TP402
TP403
E401
DI-12, 655-5
311-9
CNR SYNC IN (X)
NC
311-8
CNR SYNC IN (G)
DI-12, 655-3
311-7
1ST FIELD PULSE IN
DI-13, 652-1
311-3
CHROMA IN (CNR) (X)
RV400:ACC BURST GATE WIDTH
RV405:1st FIELD PULSE WIDTH
①
⑥
⑦
⑧


IC505 CX-20061
REG +12V
L506 100µH
TP501
C526 10 16V
L504 470µH
L505 470µH
C528 0.01 :CA
C527 0.022 :PT
R535 1k
C530 0.022 :CA
C531 47 16V
8
IC501 RC78L05A +5V REG
REG +12V
C510 0.022
L501 100µH
C511 0.022 :CA
C512 47 16V
C513 0.022 :CA
C529 0.022 :CA
R506 820
C514 0.022 :CA
9
TP502
R604 100
C515 0.022 :CA
R507 10k
IC502 µPC1037HA
4.43MHz → 924kHz or 6.85kHz
CONVERTOR
VCC
SIG IN
OUT1
502
CAR IN
OUT2
BY PASS
C516 0.001 :PT
R509 1k
FL500
LPF
R508 3300
Q501 2SC2669 BUFFER
R511 1k
DL500
DUB Y/C DELAY
C518 10 16V
R515 1k
R514 1k
C517 10 16V
R513 330
R510 1k
R512 1k
E501
Q502 2SC2669 BUFFER
Q652 2SC2669
Q653 2SC2669
Q655 2SC2669
DUB CHROMA DELAY
R656 18k
R663 1k
JW501
C660 :NM
JW502
C659 10 16V
R659 10k
R661 1k
R516 3300
L653 12µH
C661 43p :MS
R665 470
R666 47k
R664 1k
R667 1200
R668 1k
Q654 2SC2878 LOW BAND SW
Q656 2SC2878 TRAP SW
C509 10 16V
C662 :NM
L654 100µH
R518 47k
R517 47k
R519 10k
Q657 2SC2878 LOW BAND SW
C519 10 16V
R669 100k
R670 100k
IC503 BX-389L OUTPUT AMP
RV501 470
C665 10 16V
Q503 2SC2878 ACK CONTROL (B/W CHROMA MUTE)
R520 100k
R521 68
R522 2200
TP503
10
Q504 DTC144ES
Q505 DTC144ES
ACK SW
L503 100µH
REG+12V
R523 10k
R524 10k
C520 0.022 :CA
C521 47 16V
RV501:DUB C OUTPUT LEVEL
924kHz IN 306-1 SW-347A, 804-3
DUB CHROMA OUT (X) 304-3 CP-141, 604-3
ACK IN 312-7 HK-5, 914-2
DUB CHROMA OUT (G) 304-2 CP-141, 604-4
GND 306-2 SW-347A, 804-2
306-3 SW-347A, 804-1
H:LOW BAND OUT 1/2
Q407 2SC2669 ACC SW (EE/PB)
IC402 SN16913P-A HIGH SPEED ACC
Q408 2SC2669 BUFFER
IC601 CX-20061 CHROMA SELECTOR (CNR/BYPASS)
R423 47k
R426 22k
TH401 S-3K
R427 6800
TP405
TP404
RV403 4700
BUFF
OUTPUT AMP
C417 220 10V
R424 10k
R425 22k
D401 1SS119
C415 10 16V
R428 22k
R429 3900
C416 :NM
C418 :NM
R431 22k
C421 47 16V
R432 :NM
RV401 10k
R430 560
C420 30p :MS
C419 0.022 :CA
R433 3300
C425 10 16V
SIG
VCC
402
LOCAL
OUT
GND
C422 10 16V
C423 10 16V
C424 10 16V
R434 2200
RV402 2200
TP406
2
C673 1 50V
C674 1 50V
RV401:Y DG COMPENSATOR
RV402:HIGH SPEED ACC GAIN
RV403:HIGH SPEED ACC LEVEL
IC403 TA7060AP NOISE CANCELLER
C426 0.01 :CA
L403 150
R436 2700
R435 100
C427 0.01 :CA
403
R437 1200
R438 470
RV404 2200
TP407
3
C428 0.01 :CA
C429 0.01 :CA
D402 1SS99
D403 1SS99
D404 1SS99
D405 1SS99
R439 3k :RN
C430 0.022 :CA
R440 680
C431 0.022 :CA
RV404:C NOISE CANCEL
Q409 2SC2669
Q410 2SC2669
AMP
R441 1k
R443 10k
R442 1k
R444 5600
C432 47 16V
R445 3300
TP408
4
DG Y IN 1/2
PB 4.43MHz OUT 1/2
CHROMA OUT (CNR) (G) 311-2 DI-13, 651-1
CHROMA OUT (CNR) (X) 311-1 DI-13, 651-2
Q411 DTC144ES
Q412 DTA144ES
1st FIELD PULSE WIDTH MMV
Q413 DTC144ES
Q414 DTC144ES
CNR ON SW
RV405 220k
R447 10k
R448 82
D407 1SS119
R450 47k
R451 47k
TP602
FIELD PULSE WIDTH
IC602 BX-388L S-CHROMA OUTPUT AMP
L605 100µH
REG +12V
C677 10 16V
C678 47 16V
602
C681 10 16V
R619 75
TP601
5
W2
R623 560
C680 47 10V
C675 0.047
C676 47 16V
C679 47 10V
C607 0.01 :CCS
R618 5100 :RN
R620 100k
VIDEO MUTE IN 312-5 HK-5, 914-4
PB LOGIC IN 312-8 HK-5, 914-1
S-CHROMA OUT (X) 313-1 CP-162, 611-1
S-CHROMA OUT (G) 313-2 CP-162, 611-2
1ST FIELD PULSE 304-1 CP-141, 604-5
NOTE:NM is NOT MOUNTED.

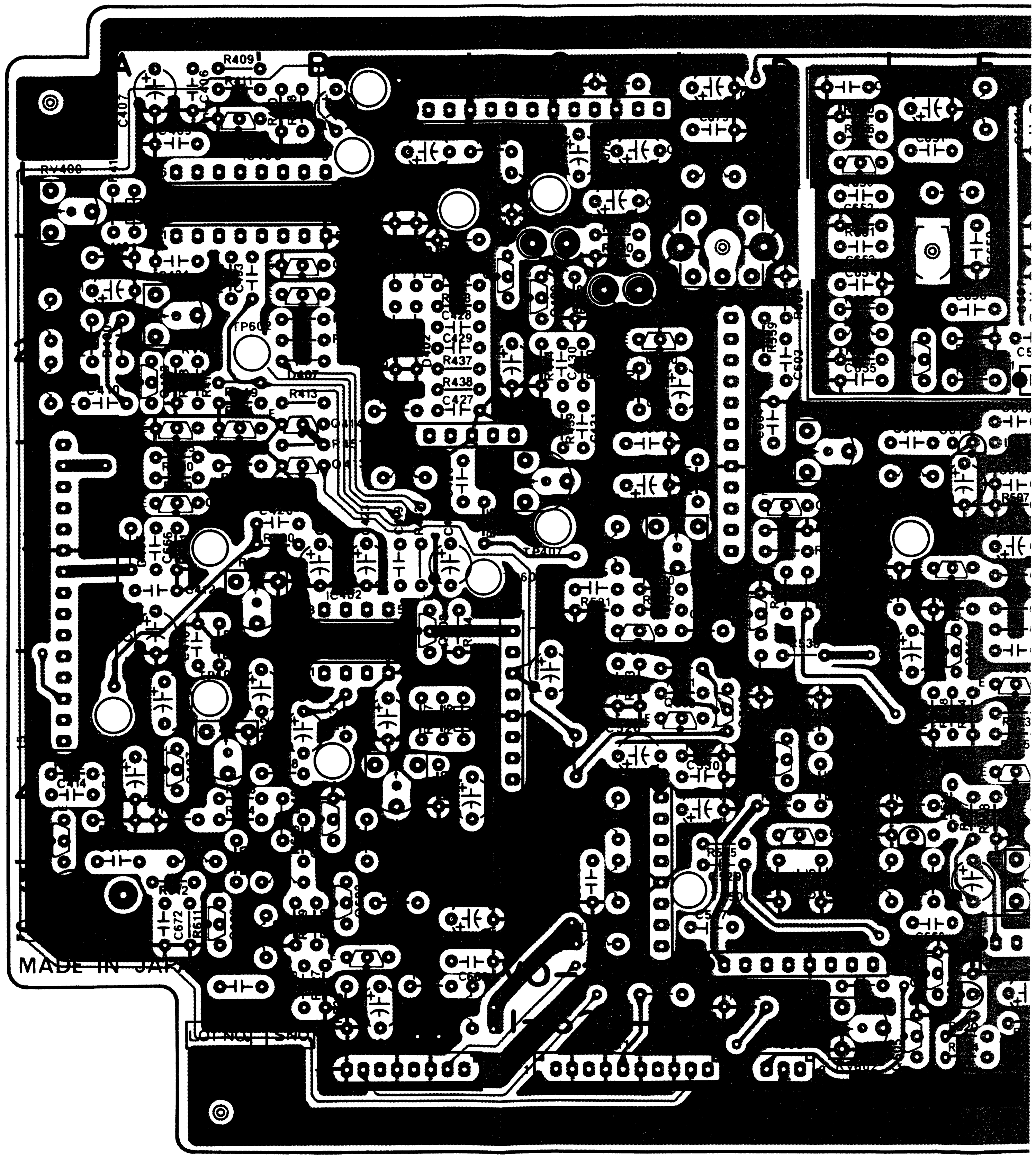
VO-30(2/2)

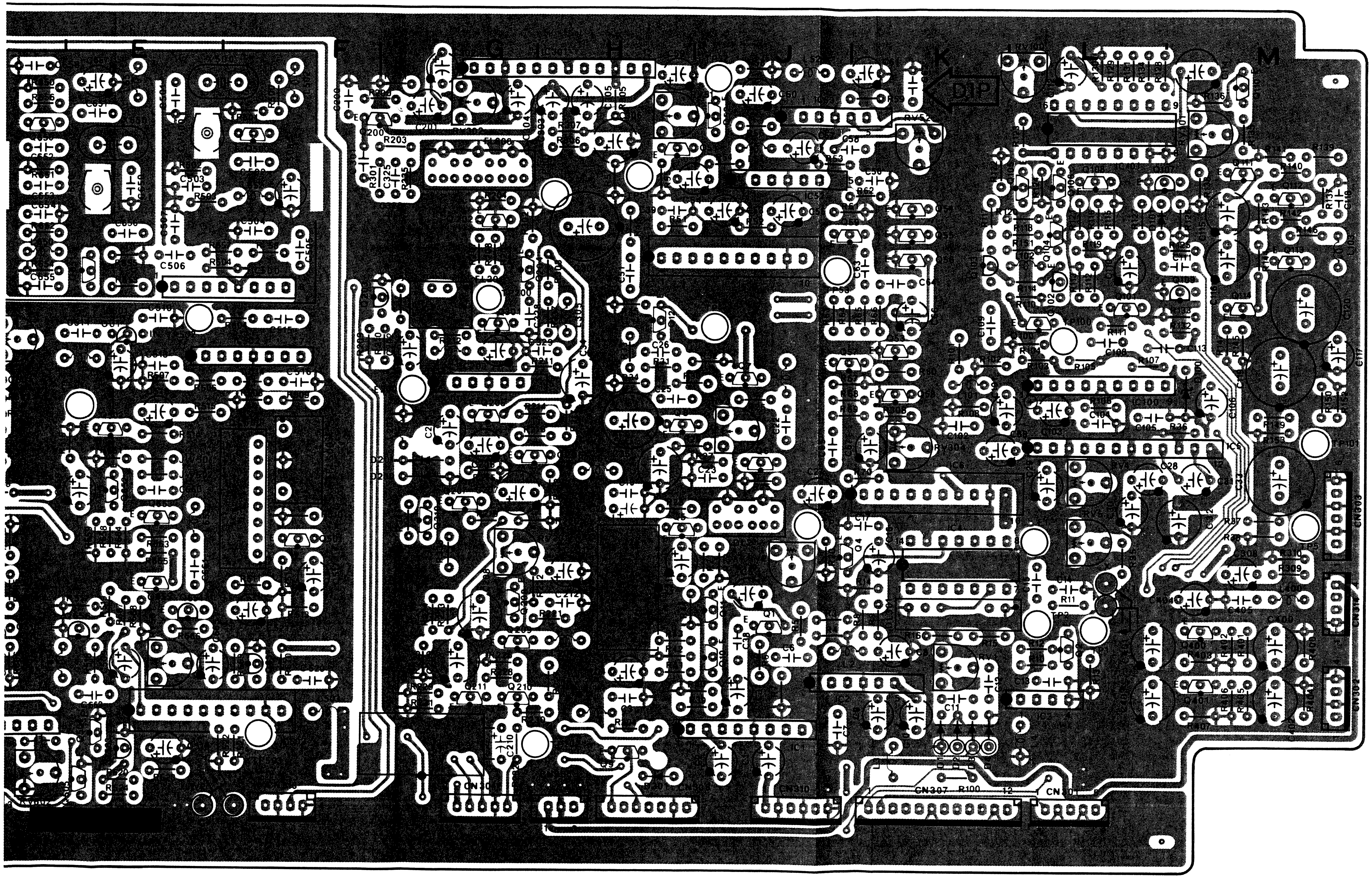
1-635-081-11, 12 (1)
EVO-9800P

VO-30; Y/C INTERFACE

VO-30(1-635-081-11,12) A SIDE

CN301	L-5	IC402	B-3	Q210	G-5	RV400	A-1
CN302	M-5	IC403	C-2	Q211	G-5	RV401	B-3
CN303	M-4	IC500	F-2	Q301	G-2	RV402	B-4
CN304	G-5	IC501	E-2	Q310	G-4	RV403	B-4
CN305	H-5	IC502	F-3	Q400	M-4	RV404	C-3
CN306	D-5	IC503	F-5	Q401	M-5	RV501	E-4
CN307	K-5	IC505	C-5	Q402	A-1	RV600	C-3
CN308	H-5	IC600	D-2	Q403	A-2	RV601	D-2
CN310	J-5	IC601	C-4	Q404	A-3	RV602	D-5
CN311	C-5	IC602	C-1	Q405	A-3		
CN312	B-5	IC603	D-5	Q406	A-3	TH400	A-1
CN313	F-5			Q407	A-4	TH401	C-4
		LV600	D-1	Q408	B-3		
CV500	E-1			Q409	C-2	X500	E-1
CV650	E-2	Q1	J-4	Q410	C-2	X650	E-1
		Q2	L-4	Q411	B-2		
D1	K-5	Q4	K-4	Q412	B-2		
D2	K-5	Q5	H-4	Q413	B-3		
D3	K-5	Q6	J-3	Q414	B-2		
D4	K-5	Q7	J-3	Q500	F-1		
D100	M-3	Q8	H-3	Q501	F-4		
D101	L-2	Q9	H-5	Q502	E-3		
D200	G-3	Q10	J-5	Q503	E-5		
D201	G-3	Q11	J-4	Q504	E-5		
D301	H-5	Q12	H-2	Q505	E-5		
D400	A-2	Q51	J-1	Q506	B-5		
D401	B-4	Q52	J-1	Q507	C-3		
D402	B-2	Q53	K-2	Q508	C-4		
D403	B-2	Q54	K-2	Q509	D-3		
D404	B-2	Q55	K-2	Q510	D-4		
D405	B-2	Q56	K-2	Q511	D-4		
D406	A-3	Q57	J-3	Q512	D-4		
D407	B-2	Q58	K-3	Q600	C-2		
D500	D-3	Q59	J-2	Q601	D-3		
		Q100	L-2	Q602	B-5		
DL2	J-4	Q101	L-2	Q603	A-5		
DL301	K-4	Q102	L-2	Q604	A-4		
DL500	F-3	Q103	K-2	Q605	B-4		
		Q104	L-2	Q650	D-1		
FL201	G-2	Q105	L-1	Q651	E-2		
FL300	G-1	Q106	L-1	Q652	E-3		
FL500	F-3	Q107	L-1	Q653	E-4		
		Q108	L-1	Q654	E-4		
IC1	J-5	Q109	M-2	Q655	E-4		
IC2	J-5	Q110	M-1	Q656	E-4		
IC3	L-5	Q111	M-1	Q657	F-5		
IC4	K-4	Q112	M-2				
IC5	M-3	Q113	M-2	RV1	K-5		
IC6	K-3	Q114	M-2	RV2	J-4		
IC51	J-2	Q200	F-1	RV3	J-3		
IC52	J-2	Q202	G-2	RV4	L-3		
IC53	J-1	Q203	F-2	RV5	L-4		
IC100	L-3	Q204	H-2	RV51	J-1		
IC101	L-1	Q205	G-3	RV52	K-1		
IC200	G-3	Q206	H-3	RV100	L-1		
IC301	H-1	Q207	G-3	RV101	M-1		
IC400	B-1	Q208	G-4	RV201	H-4		
IC401	A-3	Q209	G-4	RV302	G-1		




F
G
H
I
J
K
L
M
DIP
C506
R203
R200
IC5
IC6
CN308
CN310
CN302
CN307
CN301
R100
Q210
Q211
C210
TP10

VO-30 — A SIDE —

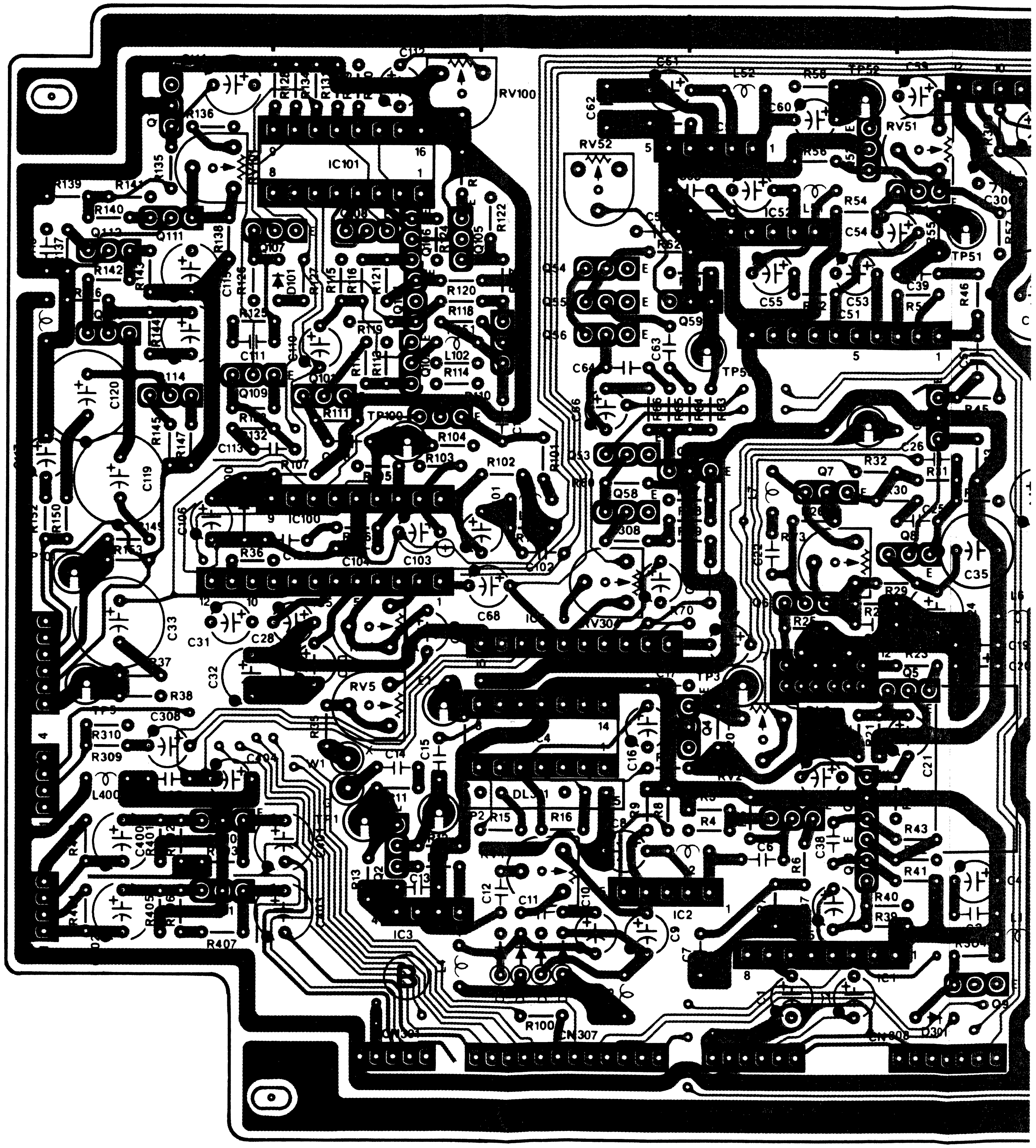
1-635-081-11, 12(1)
EVO-9800P

A Side is the same as COMPONENT Side

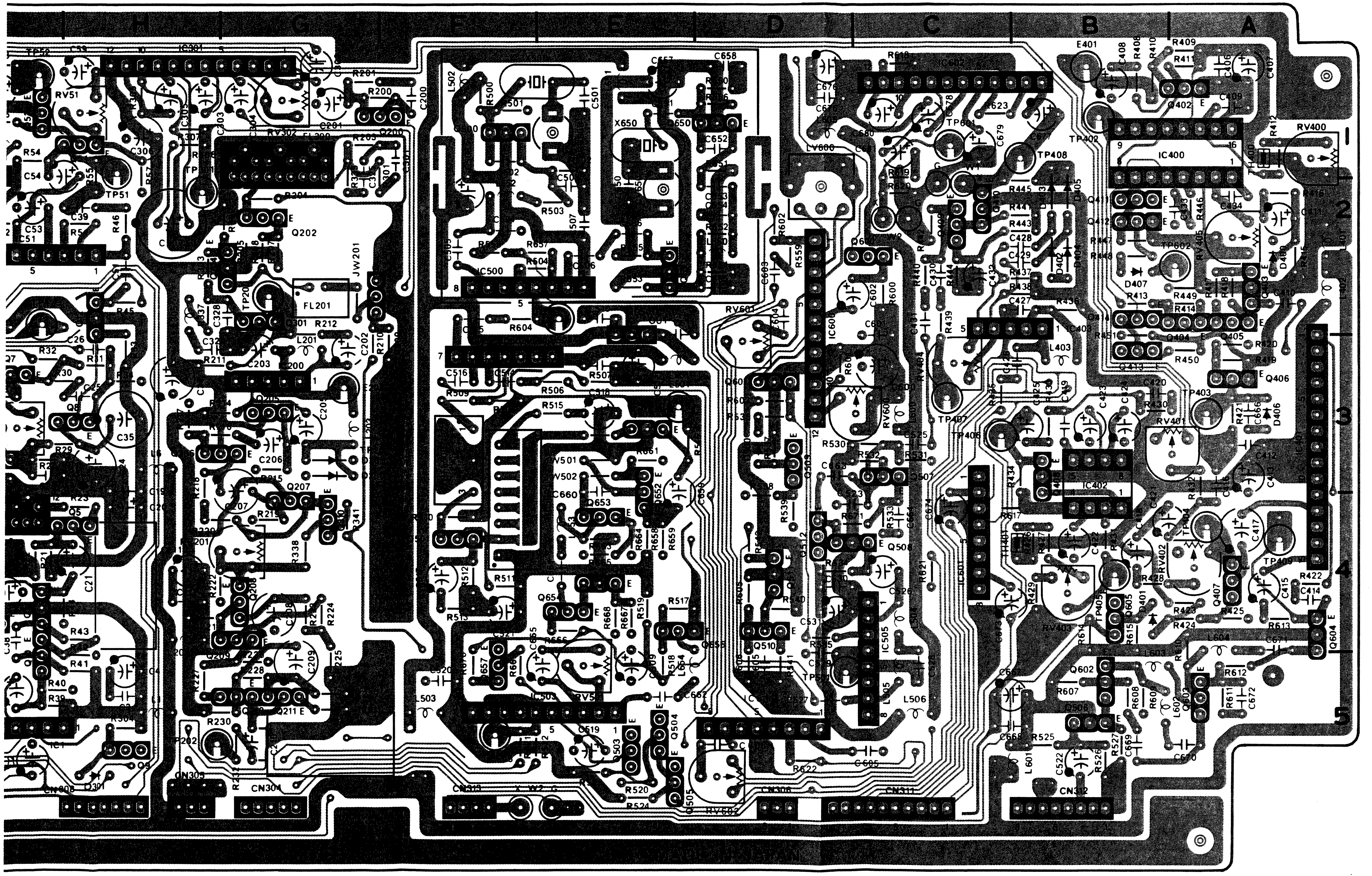
VO-30 ; Y/C INTERFACE

VO-30(1-635-081-11, 12) B SIDE

E1	L-4
E200	G-3
E401	B-1
E501	E-3
TP1	L-4
TP2	L-4
TP3	J-4
TP4	J-2
TP5	M-4
TP51	H-2
TP52	J-1
TP53	J-2
TP100	L-2
TP101	M-3
TP200	G-2
TP202	H-5
TP301	H-2
TP402	B-1
TP403	A-3
TP404	A-4
TP405	B-4
TP406	C-3
TP407	C-3
TP408	B-1
TP409	A-4
TP501	D-5
TP502	E-3
TP503	F-5
TP601	C-1
TP602	A-2



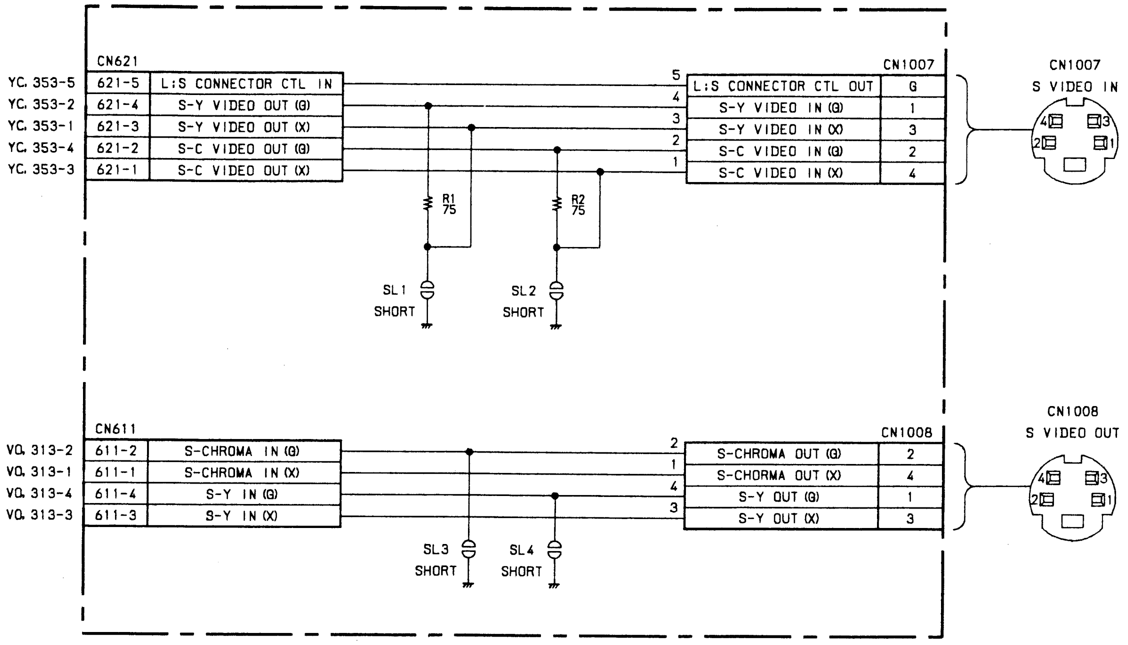
RV100
IC101
RV52
RV51
IC52
TP51
IC100
RV5
RV30
RV2
IC2
IC3
IC4
DL301
CN301
CN307
CN308
D301
TP52
TP100


H
G
F
E
D
C
B
A
1
2
3
4
5
IC301
IC400
IC402
IC500
IC501
IC503
IC505
IC601
IC602
FL201
JW201
X650
RV51
RV302
RV400
RV401
RV402
RV403
RV601
RV602
CN301
CN302
CN305
CN306
CN308
CN310
CN311
CN312
TP51
TP52
TP402
TP403
TP404
TP405
TP406
TP407
TP408
TP601
TP602
Q5
Q8
Q200
Q202
Q207
Q208
Q209
Q211
Q402
Q404
Q405
Q406
Q407
Q411
Q412
Q413
Q414
Q503
Q504
Q505
Q506
Q507
Q508
Q510
Q601
Q602
Q603
Q604
Q650
Q652
Q653
Q654
Q655
Q656
Q657
E401
L201
L403
L502
L503
L506
L601
L602
L604
LV600
W501
W502

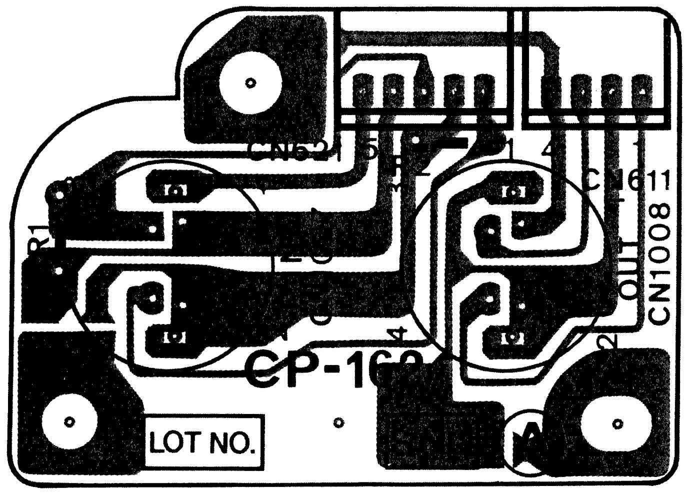
VO-30 – B SIDE –
1-635-081-11, 12(1)
EVO-9800P

B Side is the same as SOLDER Side

CP-162 ; S VIDEO CONNECTOR PANEL


CN621
YC. 353-5
YC. 353-2
YC. 353-1
YC. 353-4
YC. 353-3
621-5 L;S CONNECTOR CTL IN
621-4 S-Y VIDEO OUT (G)
621-3 S-Y VIDEO OUT (X)
621-2 S-C VIDEO OUT (G)
621-1 S-C VIDEO OUT (X)
R1 75
R2 75
SL1 SHORT
SL2 SHORT
CN1007
5 L;S CONNECTOR CTL OUT G
4 S-Y VIDEO IN (G) 1
3 S-Y VIDEO IN (X) 3
2 S-C VIDEO IN (G) 2
1 S-C VIDEO IN (X) 4
CN1007 S VIDEO IN
CN611
VQ. 313-2
VQ. 313-1
VQ. 313-4
VQ. 313-3
611-2 S-CHROMA IN (G)
611-1 S-CHROMA IN (X)
611-4 S-Y IN (G)
611-3 S-Y IN (X)
SL3 SHORT
SL4 SHORT
CN1008
2 S-CHROMA OUT (G) 2
1 S-CHORMA OUT (X) 4
4 S-Y OUT (G) 1
3 S-Y OUT (X) 3
CN1008 S VIDEO OUT

CP-162
1-635-085-11(1)
EVO-9800P


CN621
CN611
CN1008
OUT
R1
LOT NO.
CP-162

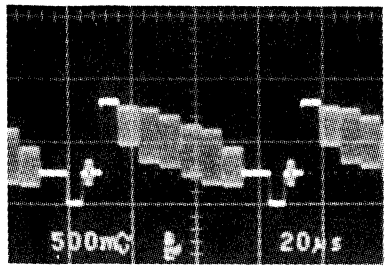
CP-162 -A SIDE-
1-635-085-11(1)
EVO-9800P

A Side is the same as COMPONENT Side

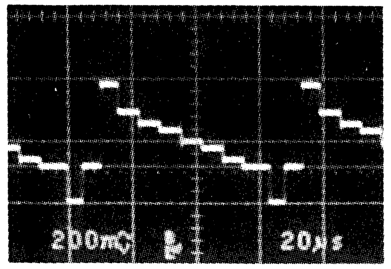
YC-46 ; Y/C SEPARATOR

YC-46

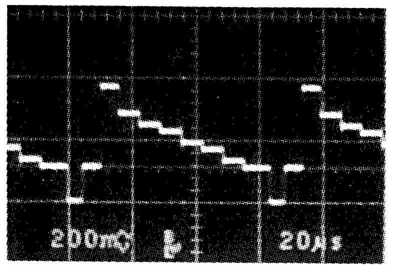
① TP100 EE mode



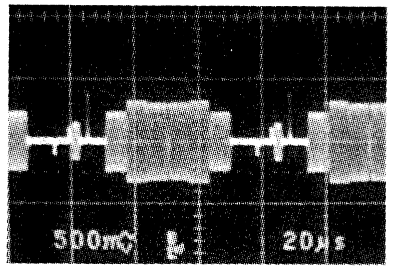
② TP102 EE mode



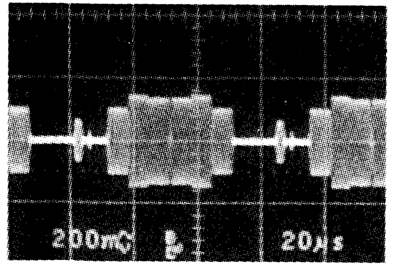
③ TP103 EE mode



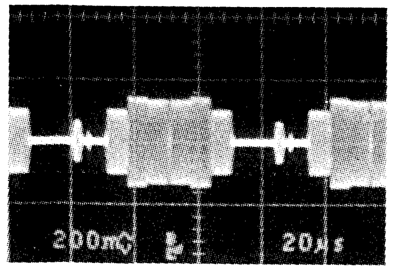
④ TP201 EE mode



⑤ TP202 EE mode

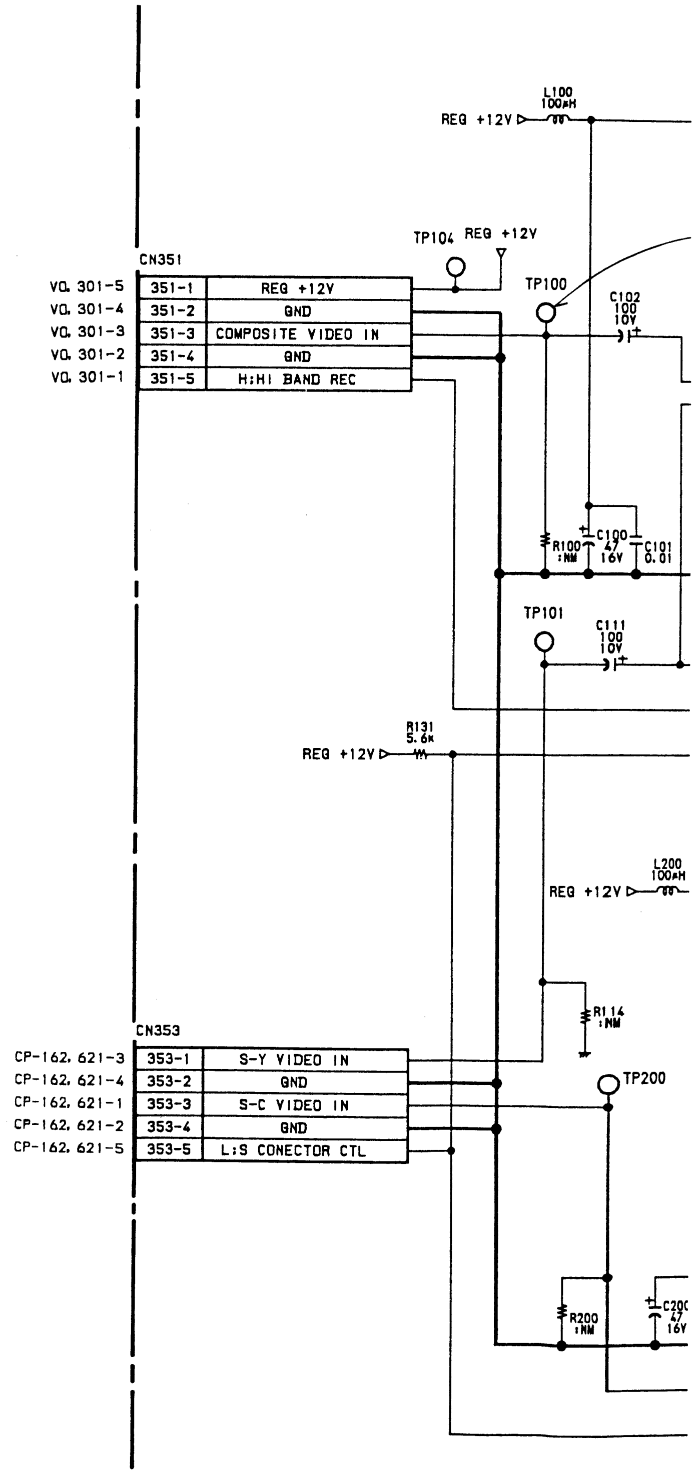


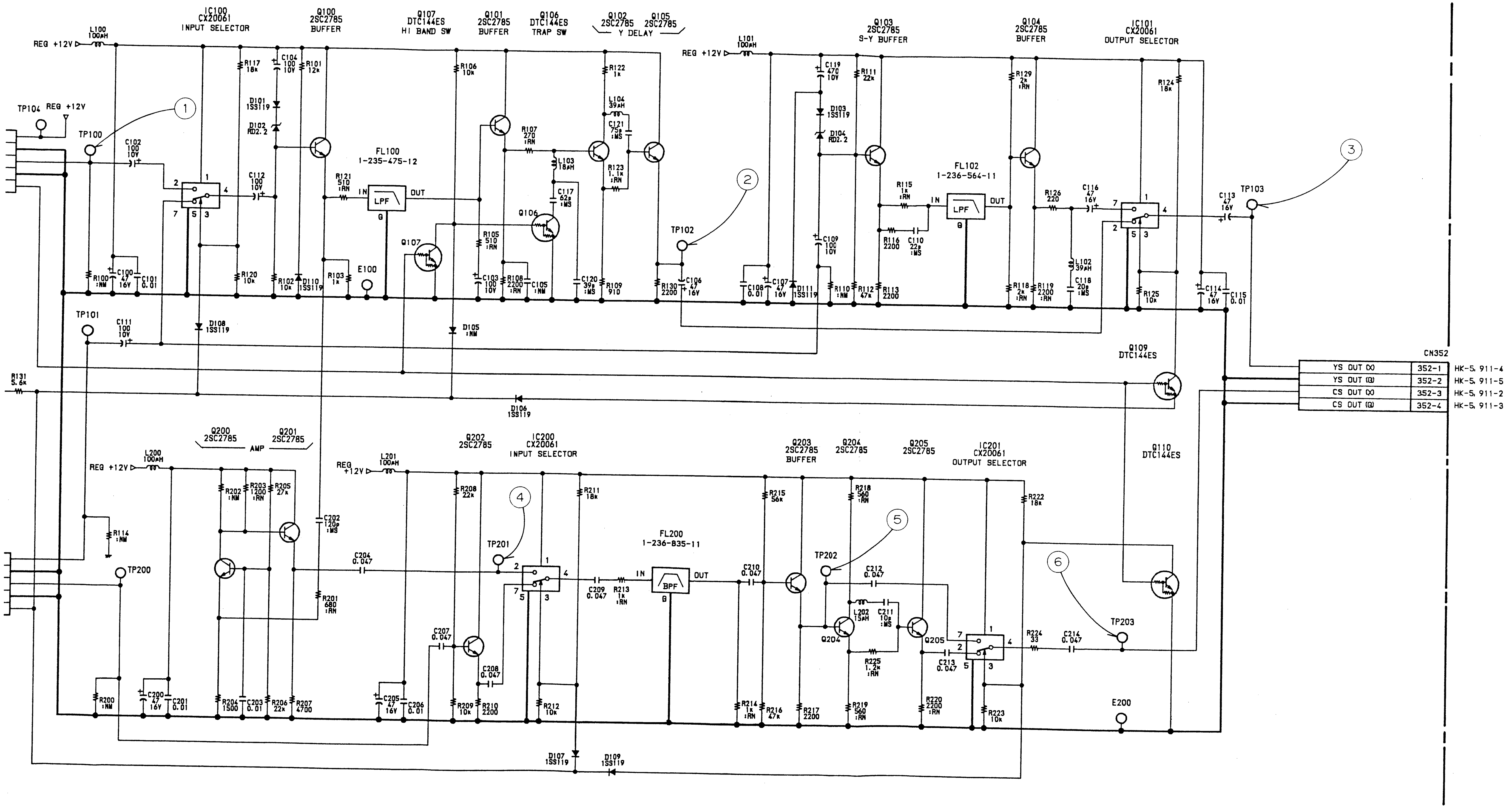
⑥ TP203 EE mode



Measurement Condition

- Input Signal : Color Bars
- Cassette Tape : Alignment tape WR5-8CSE (Color Bars Signal)


L100 100μH
REG +12V
TP104 REG +12V
CN351
TP100
C102 100 10V
VQ. 301-5 351-1 REG +12V
VQ. 301-4 351-2 GND
VQ. 301-3 351-3 COMPOSITE VIDEO IN
VQ. 301-2 351-4 GND
VQ. 301-1 351-5 H:HI BAND REC
R100 :NM
C100 47 16V
C101 0.01
TP101
C111 100 10V
R131 5.6K
REG +12V
L200 100μH
REG +12V
R114 :NM
CN353
CP-162, 621-3 353-1 S-Y VIDEO IN
CP-162, 621-4 353-2 GND
CP-162, 621-1 353-3 S-C VIDEO IN
CP-162, 621-2 353-4 GND
CP-162, 621-5 353-5 L;S CONECTOR CTL
TP200
R200 :NM
C200 47 16V


IC100 CX20061 INPUT SELECTOR
Q100 2SC2785 BUFFER
Q107 DTC144ES HI BAND SW
Q101 2SC2785 BUFFER
Q106 DTC144ES TRAP SW
Q102 2SC2785
Q105 2SC2785
Y DELAY
L101 100μH
REG +12V
Q103 2SC2785 S-Y BUFFER
Q104 2SC2785 BUFFER
IC101 CX20061 OUTPUT SELECTOR
REG +12V
L100 100μH
TP104
TP100
TP101
TP102
TP103
FL100 1-235-475-12
LPF
FL102 1-236-564-11
E100
R131 5.6k
D106 1SS119
D108 1SS119
D105 :NM
Q109 DTC144ES
Q110 DTC144ES
CN352
YS OUT (X) 352-1 HK-5, 911-4
YS OUT (G) 352-2 HK-5, 911-5
CS OUT (X) 352-3 HK-5, 911-2
CS OUT (G) 352-4 HK-5, 911-3
Q200 2SC2785
Q201 2SC2785
AMP
L200 100μH
REG +12V
L201 100μH
Q202 2SC2785
IC200 CX20061 INPUT SELECTOR
FL200 1-236-835-11
BPF
Q203 2SC2785 BUFFER
Q204 2SC2785
Q205 2SC2785
IC201 CX20061 OUTPUT SELECTOR
TP200
TP201
TP202
TP203
E200
D107 1SS119
D109 1SS119
①
②
③
④
⑤
⑥

YC-46

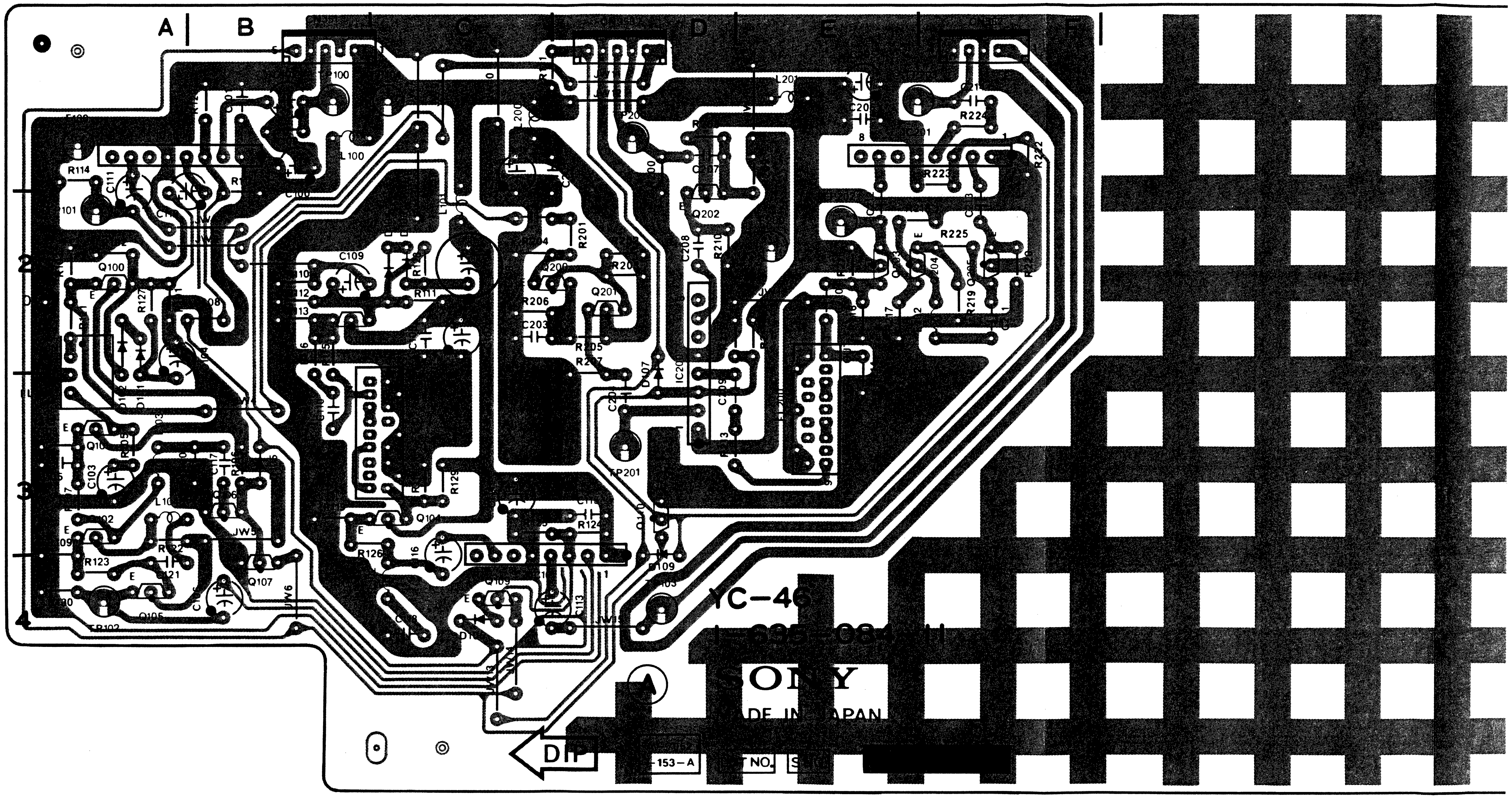
1-635-084-11(1)
EVO-9800P

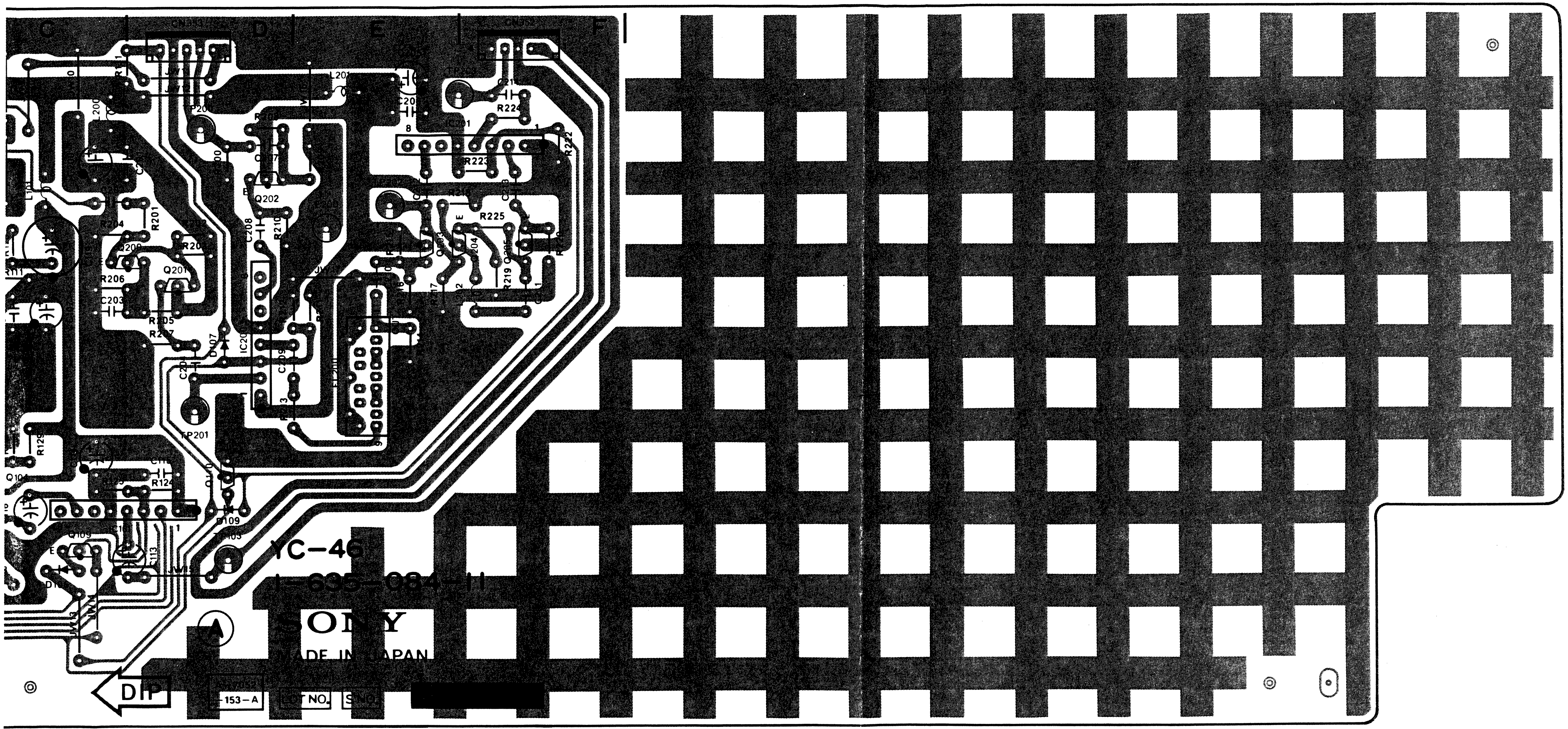
YC-46 ; Y/C SEPARATOR

YC-46(1-635-084-11) A SIDE

CN351	B-1
CN532	F-1
CN533	D-1
D101	A-3
D102	A-3
D103	C-2
D104	C-2
D106	C-4
D107	D-3
D108	B-2
D109	D-4
E100	A-1S
E200	E-2S
FL100	A-3
FL102	C-3
FL200	E-3
IC100	A-1
IC101	C-4
IC200	D-2
IC201	E-1
Q100	A-2
Q101	A-3
Q102	A-3
Q103	B-2
Q104	C-3
Q105	A-4
Q106	B-3
Q107	B-4
Q109	C-4
Q110	D-3
Q200	D-2
Q201	D-2
Q202	D-2
Q203	E-2
Q204	F-2
Q205	F-2
TP100	B-1S
TP101	A-2S
TP102	A-4S
TP103	D-4S
TP104	C-1S
TP200	D-1S
TP201	D-3S
TP202	E-2S
TP203	E-1S

S : B SIDE (SOLDERING SIDE)

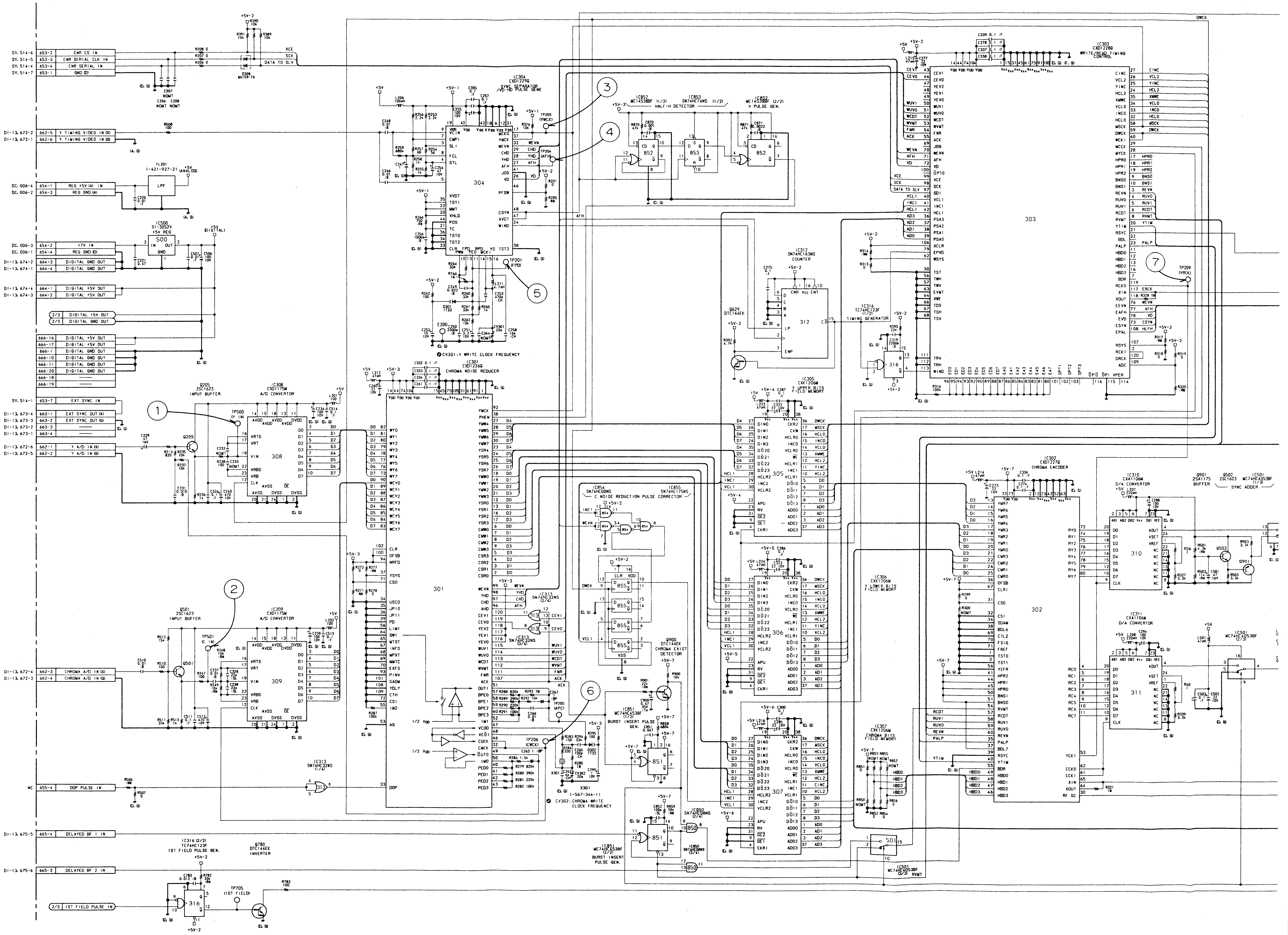

A
B
C
D
E
F
2
3
4
TP100
L100
C100
R114
C111
C110
Q100
R127
C109
R111
C103
L10
Q102
R122
R123
C121
Q105
TP102
Q107
JW5
JW6
Q104
R126
R129
C116
Q109
C113
R124
C118
D109
TP103
L201
C205
R224
R223
R222
R225
R219
Q202
Q200
Q201
R206
C203
R205
R201
C208
R210
TP201
IC200
D107
YC-46
1-635-084
SONY
MADE IN JAPAN
DIP
153-A
LOT NO.

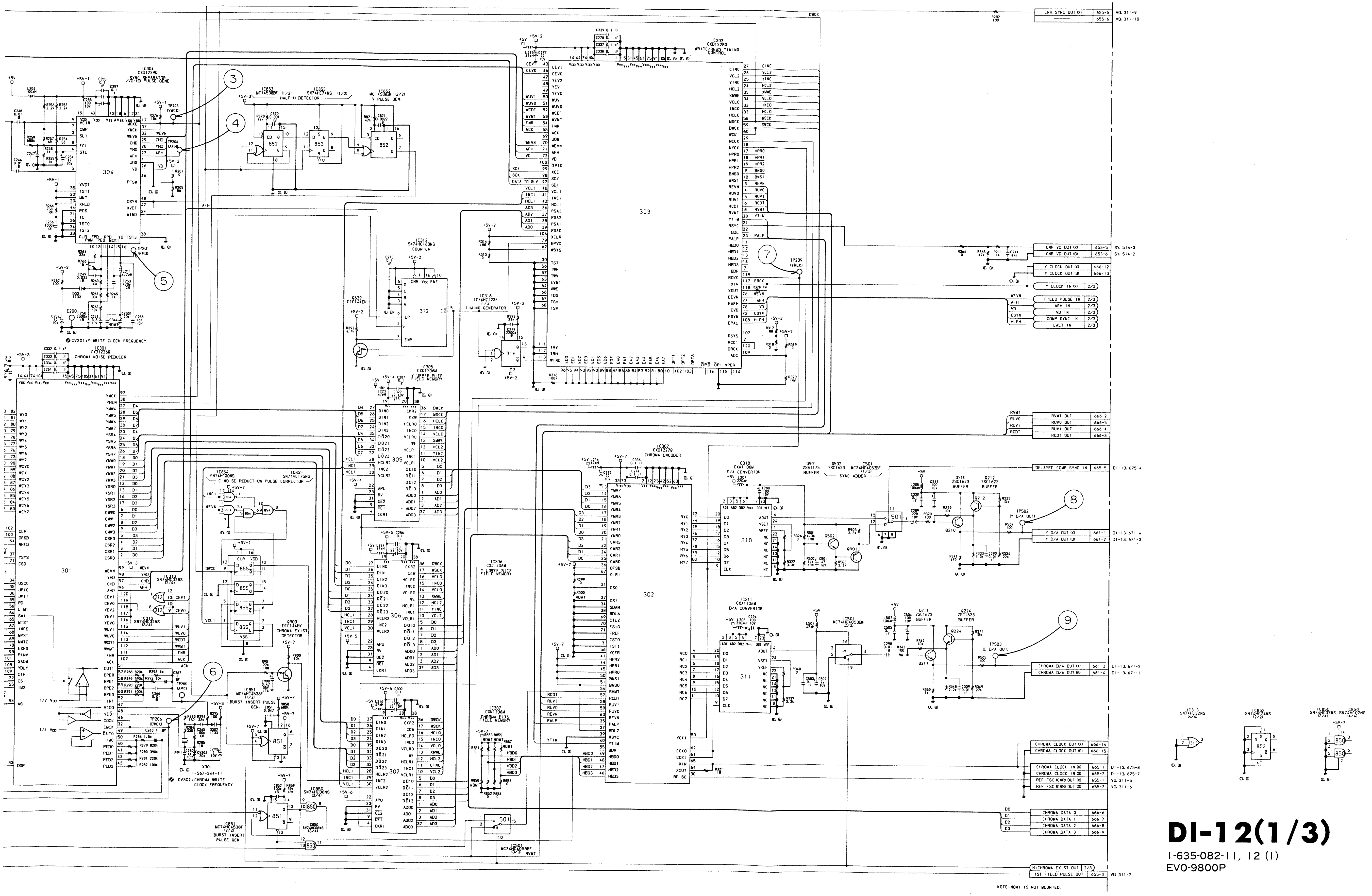

C
D
E
F
L201
C202
C201
C211
R224
R223
R222
R214
R225
Q202
Q207
C208
R210
R201
R204
Q206
Q201
R206
C203
R205
R207
R202
C209
IC201
Q203
Q204
Q205
R219
R217
TP201
TP202
R129
Q104
R124
D109
Q109
R113
YC-46
1-635-084-11
SONY
MADE IN JAPAN
DIP
153-A
LOT NO.
S NO.

YC-46 — A SIDE —
1-635-084-11(1)
EVO-9800P

A Side is the same as COMPONENT Side

DI-12 (1/3); DIGITAL CHROMA NOISE REDUCER


IC304 CXD1229Q SYNC SEPARATOR /VD/HD PULSE GENE
IC852 MC14538BF (1/2) HALF-H DETECTOR
IC853 SN74HC74NS (1/2)
IC852 MC14538BF (2/2) V PULSE GEN.
IC303 CXD1228Q WRITE/READ TIMING CONTROL
FL201 1-421-927-21 LPF
IC500 SI-3052V +5V REG
IC308 CXD1175M A/D CONVERTOR
Q205 2SC1623 INPUT BUFFER
IC301 CXD1226Q CHROMA NOISE REDUCER
IC309 CXD1175M A/D CONVERTOR
Q501 2SC1623 INPUT BUFFER
IC312 SN74HC163NS COUNTER
IC316 TC74HC123F (1/2) TIMING GENERATOR
IC305 CXK1206M Y UPPER BITS FIELD MEMORY
IC306 CXK1206M Y LOWER BITS FIELD MEMORY
IC307 CXK1206M CHROMA BITS FIELD MEMORY
IC302 CXD1227Q CHROMA ENCODER
IC310 CXA1106M D/A CONVERTOR
IC311 CXA1106M D/A CONVERTOR
Q901 2SA1175 BUFFER
Q502 2SC1623 SYNC ADDER
IC501 MC74HC4053BF (1/3)
IC854 SN74HC00NS C NOISE REDUCTION PULSE GEN.
IC855 SN74HC175NS PULSE CORRECTOR
Q900 DTC144EK CHROMA EXIST DETECTOR
IC851 MC74HC4538F (1/2) BURST INSERT PULSE GEN.
IC850 SN74HC08NS (3/4)
IC851 MC74HC4538F (2/2) BURST INSERT PULSE GEN.
IC313 SN74HC32NS (2/4)
IC316 (2/2) TC74HC123F 1ST FIELD PULSE GEN.
Q780 DTC144EK INVERTER
X301 1-567-344-11
CV301: Y WRITE CLOCK FREQUENCY
CV302: CHROMA WRITE CLOCK FREQUENCY
TP500 (Y IN)
TP501 (C IN)
TP203 (YWCK)
TP204 (AFH)
TP201 (FPD)
TP206 (CWCK)
TP209 (YRCK)
TP705 (1ST FIELD)
CNR CS IN
CNR SERIAL CLK IN
CNR SERIAL IN
Y TIMING VIDEO IN
REG +5V (A) IN
DIGITAL +5V OUT
DIGITAL GND OUT
EXT SYNC IN
EXT SYNC OUT
Y A/D IN
CHROMA A/D IN
DOP PULSE IN
DELAYED BF 1 IN
DELAYED BF 2 IN
1ST FIELD PULSE IN
A
B
C
D
E
F
G
H


IC304 CXD1229Q SYNC SEPARATOR /VD/HD PULSE GENE
IC852 MC14538BF (1/2) HALF-H DETECTOR
IC853 SN74HC74NS (1/2)
IC852 MC14538BF (2/2) V PULSE GEN.
IC303 CXD1228Q WRITE/READ TIMING CONTROL
IC312 SN74HC163NS COUNTER
Q629 DTC144EK
IC316 TC74HC123F (1/2) TIMING GENERATOR
IC301 CXD1226Q CHROMA NOISE REDUCER
IC305 CXK1206M Y UPPER 8 BITS FIELD MEMORY
IC306 CXK1206M Y LOWER 8 BITS FIELD MEMORY
IC307 CXK1206M CHROMA 8 BITS FIELD MEMORY
IC302 CXD1227Q CHROMA ENCODER
IC854 SN74HC00NS C NOISE REDUCTION PULSE CORRECTOR
IC855 SN74HC175NS
IC313 SN74HC32NS
Q900 DTC144EK CHROMA EXIST DETECTOR
IC851 MC74HC4538F (1/2) BURST INSERT PULSE GEN.
IC851 MC74HC4538F (2/2) BURST INSERT PULSE GEN.
IC850 SN74HC08NS
IC501 MC74HC4053BF
IC310 CXA1106M D/A CONVERTOR
IC311 CXA1106M D/A CONVERTOR
Q901 2SA1175 BUFFER
Q502 2SC1623 SYNC ADDER
Q210 2SC1623 BUFFER
Q212 2SC1623 BUFFER
Q214 2SC1623 BUFFER
Q224 2SC1623 BUFFER
TP203 (YWCK)
TP204 (AFH)
TP201 (FPD)
TP209 (YRCK)
TP205 (APC)
TP206 (CWCK)
TP502 (Y D/A OUT)
TP503 (C D/A OUT)
X301 1-567-344-11
CV301: Y WRITE CLOCK FREQUENCY
CV302: CHROMA WRITE CLOCK FREQUENCY
CNR SYNC OUT 655-5 VG 311-9
655-6 VG 311-10
CNR VD OUT 653-5 SY 514-3
CNR VD OUT 653-6 SY 514-2
Y CLOCK OUT 666-12
Y CLOCK OUT 666-13
Y CLOCK IN 2/3
FIELD PULSE IN 2/3
AFH IN 2/3
VD IN 2/3
COMP SYNC IN 2/3
LALT IN 2/3
RVWT OUT 666-2
RUVO OUT 666-5
RUV1 OUT 666-4
RCDT OUT 666-3
DELAYED COMP SYNC IN 665-5 DI-13 675-4
Y D/A OUT 661-1 DI-13 671-4
Y D/A OUT 661-2 DI-13 671-3
CHROMA D/A OUT 661-3 DI-13 671-2
CHROMA D/A OUT 661-4 DI-13 671-1
CHROMA CLOCK OUT 666-14
CHROMA CLOCK OUT 666-15
CHROMA CLOCK IN 665-1 DI-13 675-8
CHROMA CLOCK IN 665-2 DI-13 675-7
REF FSC (CNR) OUT 655-1 VG 311-5
REF FSC (CNR) OUT 655-2 VG 311-6
CHROMA DATA 0 666-6
CHROMA DATA 1 666-7
CHROMA DATA 2 666-8
CHROMA DATA 3 666-9
H: CHROMA EXIST OUT 2/3
1ST FIELD PULSE OUT 655-3 VG 311-7
IC313 SN74HC32NS (4/4)
IC853 SN74HC74NS (2/2)
IC850 SN74HC08NS (3/4) SN74HC08NS (4/4)
E
F
G
H
I
J
K
L

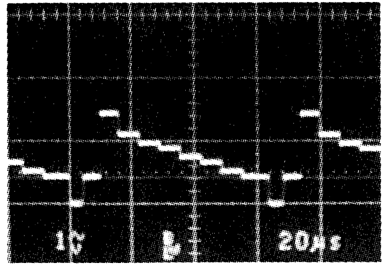
NOTE: NOMT IS NOT MOUNTED.

DI-12(1/3)

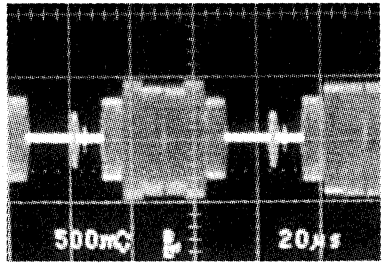
1-635-082-11, 12 (1)
EVO-9800P

DI-12 (1/3)

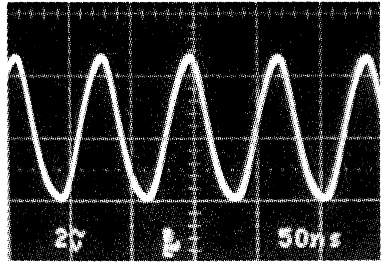
① TP500 EE mode



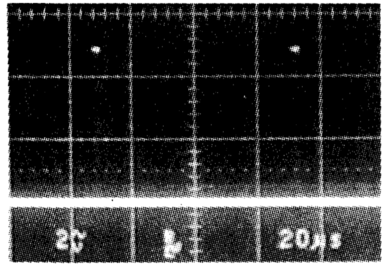
② TP501 EE mode



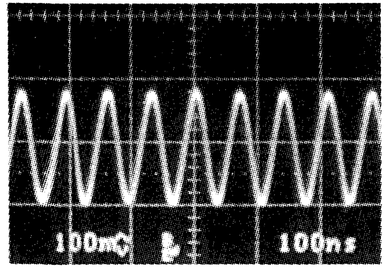
③ TP203 EE mode 14.21MHz



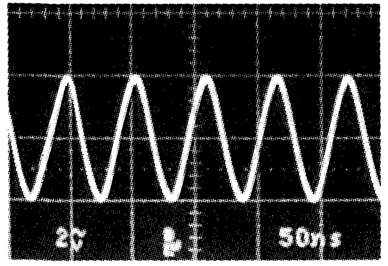
④ TP204 EE mode



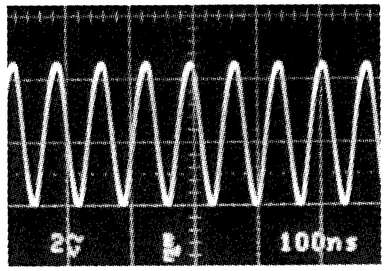
⑤ TP201 EE mode 14.21MHz



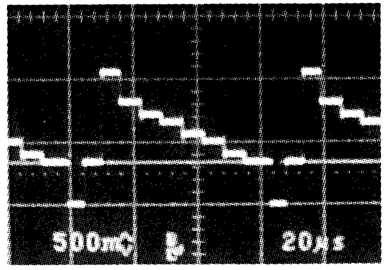
⑥ TP206 EE mode 17.73MHz



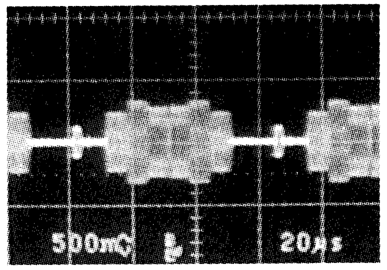
⑦ TP209 EE mode 14.21MHz



⑧ TP502 EE mode



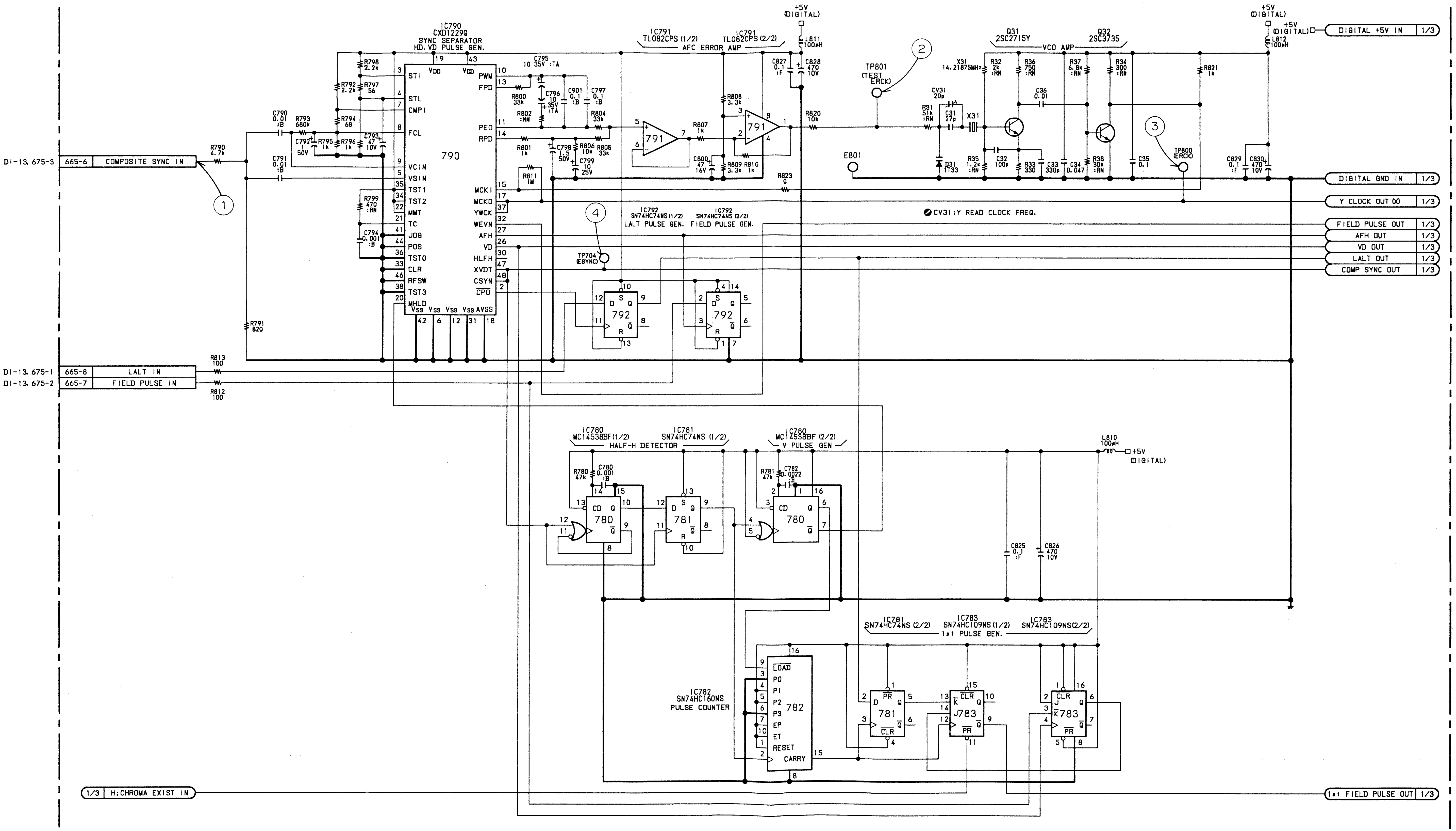
⑨ TP503 EE mode



Measurement Condition

- Input Signal : Color Bars
- Cassette Tape : Alignment tape WR5-8CSE (Color Bars Signal)

DI-12 (2/3); READ TIMING CONTROL PULSE GENERATOR

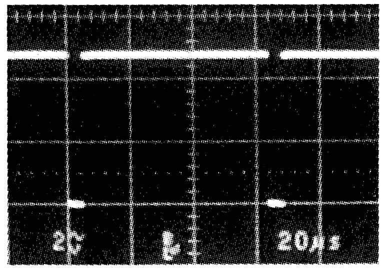

+5V (DIGITAL)
IC790 CXD1229Q SYNC SEPARATOR HD, VD PULSE GEN.
IC791 TL082CPS (1/2)
IC791 TL082CPS (2/2)
AFC ERROR AMP
L811 100µH
C827 0.1 :F
C828 470 10V
TP801 (TEST ERCK)
Q31 2SC2715Y
Q32 2SC3735
VCO AMP
X31 14.21875MHz
R32 2k :RN
R36 750 :RN
R37 6.8k :RN
R34 300 :RN
R821 1k
L812 100µH
DIGITAL +5V IN 1/3
DIGITAL GND IN 1/3
Y CLOCK OUT (X) 1/3
CV31;Y READ CLOCK FREQ.
FIELD PULSE OUT 1/3
AFH OUT 1/3
VD OUT 1/3
LALT OUT 1/3
COMP SYNC OUT 1/3
CV31 20p
R31 51k :RN
C31 27p
C36 0.01
D31 1T33
R35 1.2k :RN
C32 100p
R33 330
C33 330p
C34 0.047
R38 30k :RN
C35 0.1
TP800 (ERCK)
C829 0.1 :F
C830 470 10V
E801
R820 10k
R823 0
R798 2.2k
R792 2.2k
R797 56
R794 68
C790 0.01 :B
R793 680k
C792 1 50V
R795 1k
R796 1k
C793 47 10V
C791 0.01 :B
R790 4.7k
R799 470 :RN
C794 0.001 :B
R791 820
STI STL CMPI FCL VCIN VSIN TST1 TST2 MMT TC JOG POS TSTO CLR RFSW TST3 MHLD
VDD VDD PWM FPD PEO RPD MCKI MCKO YWCK WEVN AFH VD HLFH XVDT CSYN CPO
VSS VSS VSS VSS AVSS
790
C795 10 35V :TA
C796 10 35V :TA
C901 0.1 :B
C797 0.1 :B
R800 33k
R802 :NM
R804 33k
R801 1k
R811 1M
C798 1.5 50V
R806 10k
R805 33k
C799 10 25V
R807 1k
R808 3.3k
C800 47 16V
R809 3.3k
R810 1k
791
TP704 (ESYNC)
IC792 SN74HC74NS (1/2) LALT PULSE GEN.
IC792 SN74HC74NS (2/2) FIELD PULSE GEN.
792
DI-13, 675-3 665-6 COMPOSITE SYNC IN
DI-13, 675-1 665-8 LALT IN
DI-13, 675-2 665-7 FIELD PULSE IN
R813 100
R812 100
IC780 MC14538BF (1/2)
IC781 SN74HC74NS (1/2)
HALF-H DETECTOR
IC780 MC14538BF (2/2)
V PULSE GEN
R780 47k
C780 0.001 :B
R781 47k
C782 0.0022 :B
CD Q
780
781
L810 100µH
+5V (DIGITAL)
C825 0.1 :F
C826 470 10V
IC781 SN74HC74NS (2/2)
IC783 SN74HC109NS (1/2)
IC783 SN74HC109NS (2/2)
1st PULSE GEN.
IC782 SN74HC160NS PULSE COUNTER
LOAD P0 P1 P2 P3 EP ET RESET CARRY
782
783
1/3 H;CHROMA EXIST IN
1st FIELD PULSE OUT 1/3
①
②
③
④

DI-12(2/3)

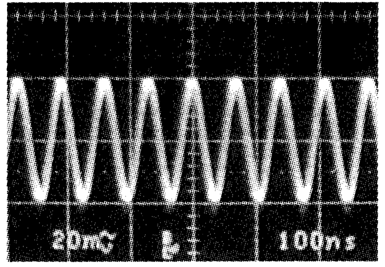
1-635-082-11, 12 (1)
EVO-9800P

DI-12 (2/3)

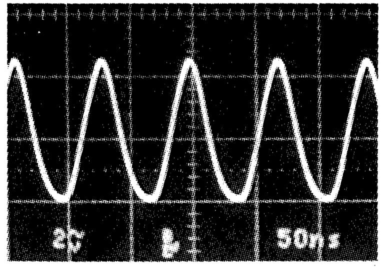
① CN665-6 EE mode



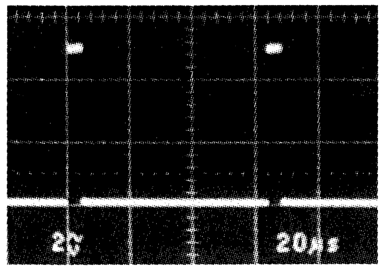
② TP801 EE mode 14.21MHz



③ TP800 EE mode 14.21MHz



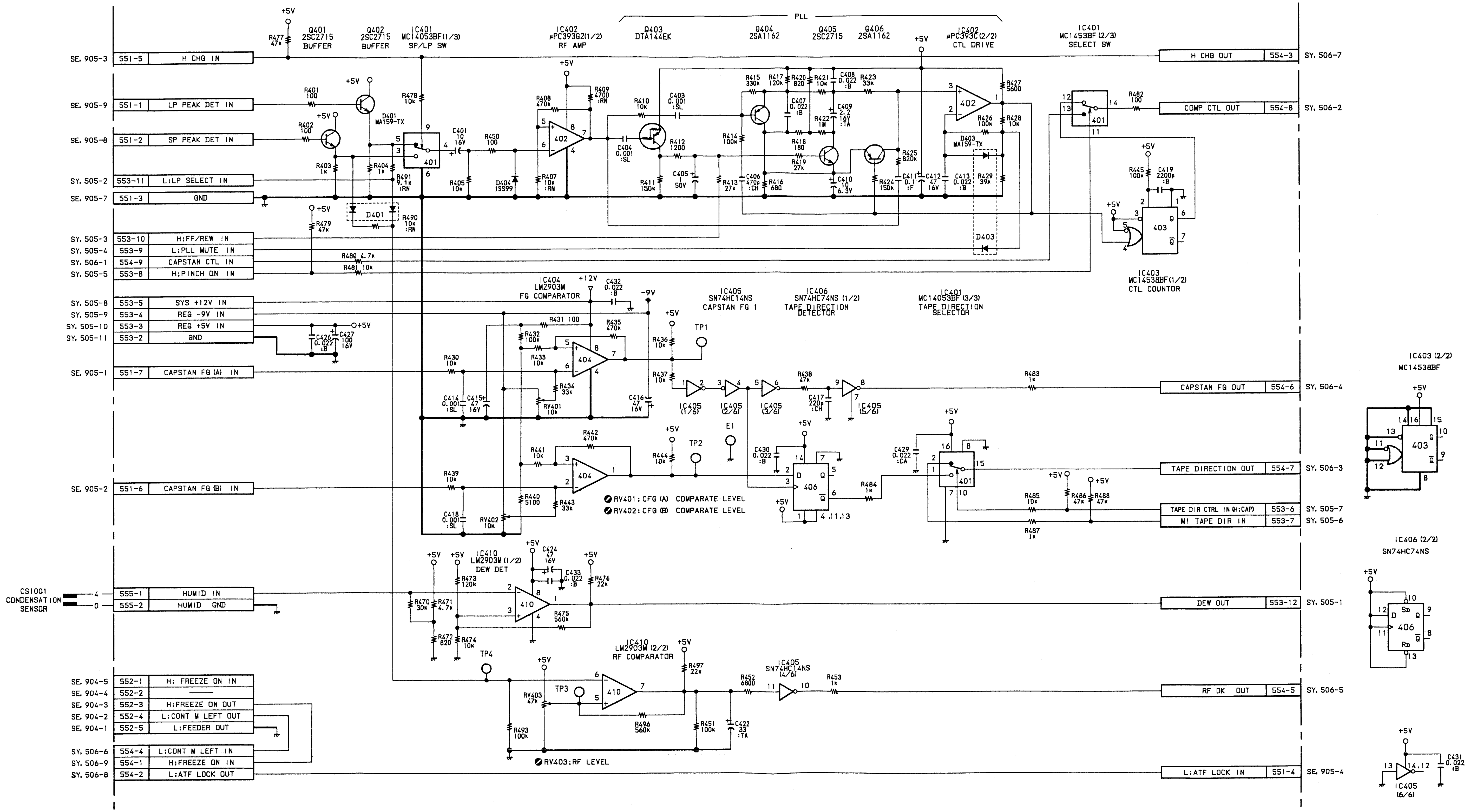
④ TP704 EE mode



Measurement Condition

- Input Signal : Color Bars
- Cassette Tape : Alignment tape WR5-8CSE (Color Bars Signal)

DI-12 (3/3); CTL DETECT/CAPSTAN FG COMPARATE


SE. 905-3 551-5 H CHG IN
SE. 905-9 551-1 LP PEAK DET IN
SE. 905-8 551-2 SP PEAK DET IN
SY. 505-2 553-11 L;LP SELECT IN
SE. 905-7 551-3 GND
SY. 505-3 553-10 H;FF/REW IN
SY. 505-4 553-9 L;PLL MUTE IN
SY. 506-1 554-9 CAPSTAN CTL IN
SY. 505-5 553-8 H;PINCH ON IN
SY. 505-8 553-5 SYS +12V IN
SY. 505-9 553-4 REG -9V IN
SY. 505-10 553-3 REG +5V IN
SY. 505-11 553-2 GND
SE. 905-1 551-7 CAPSTAN FG (A) IN
SE. 905-2 551-6 CAPSTAN FG (B) IN
CS1001 CONDENSATION SENSOR
555-1 HUMID IN
555-2 HUMID GND
SE. 904-5 552-1 H: FREEZE ON IN
SE. 904-4 552-2
SE. 904-3 552-3 H;FREEZE ON OUT
SE. 904-2 552-4 L:CONT M LEFT OUT
SE. 904-1 552-5 L:FEEDER OUT
SY. 506-6 554-4 L;CONT M LEFT IN
SY. 506-9 554-1 H;FREEZE ON IN
SY. 506-8 554-2 L;ATF LOCK OUT
Q401 2SC2715 BUFFER
Q402 2SC2715 BUFFER
IC401 MC14053BF(1/3) SP/LP SW
IC402 μPC393G2(1/2) RF AMP
PLL
Q403 DTA144EK
Q404 2SA1162
Q405 2SC2715
Q406 2SA1162
IC402 μPC393C(2/2) CTL DRIVE
IC401 MC1453BF(2/3) SELECT SW
IC403 MC14538BF(1/2) CTL COUNTOR
IC404 LM2903M FG COMPARATOR
IC405 SN74HC14NS CAPSTAN FG 1
IC406 SN74HC74NS (1/2) TAPE DIRECTION DETECTOR
IC401 MC14053BF (3/3) TAPE DIRECTION SELECTOR
IC410 LM2903M (1/2) DEW DET
IC410 LM2903M (2/2) RF COMPARATOR
IC405 SN74HC14NS (4/6)
RV401: CFG (A) COMPARATE LEVEL
RV402: CFG (B) COMPARATE LEVEL
RV403: RF LEVEL
TP1
TP2
TP3
TP4
E1
H CHG OUT 554-3 SY. 506-7
COMP CTL OUT 554-8 SY. 506-2
CAPSTAN FG OUT 554-6 SY. 506-4
TAPE DIRECTION OUT 554-7 SY. 506-3
TAPE DIR CTRL IN (H;CAP) 553-6 SY. 505-7
M1 TAPE DIR IN 553-7 SY. 505-6
DEW OUT 553-12 SY. 505-1
RF OK OUT 554-5 SY. 506-5
L;ATF LOCK IN 551-4 SE. 905-4
IC403 (2/2) MC14538BF
IC406 (2/2) SN74HC74NS
IC405 (6/6)
1
2
3
4
5

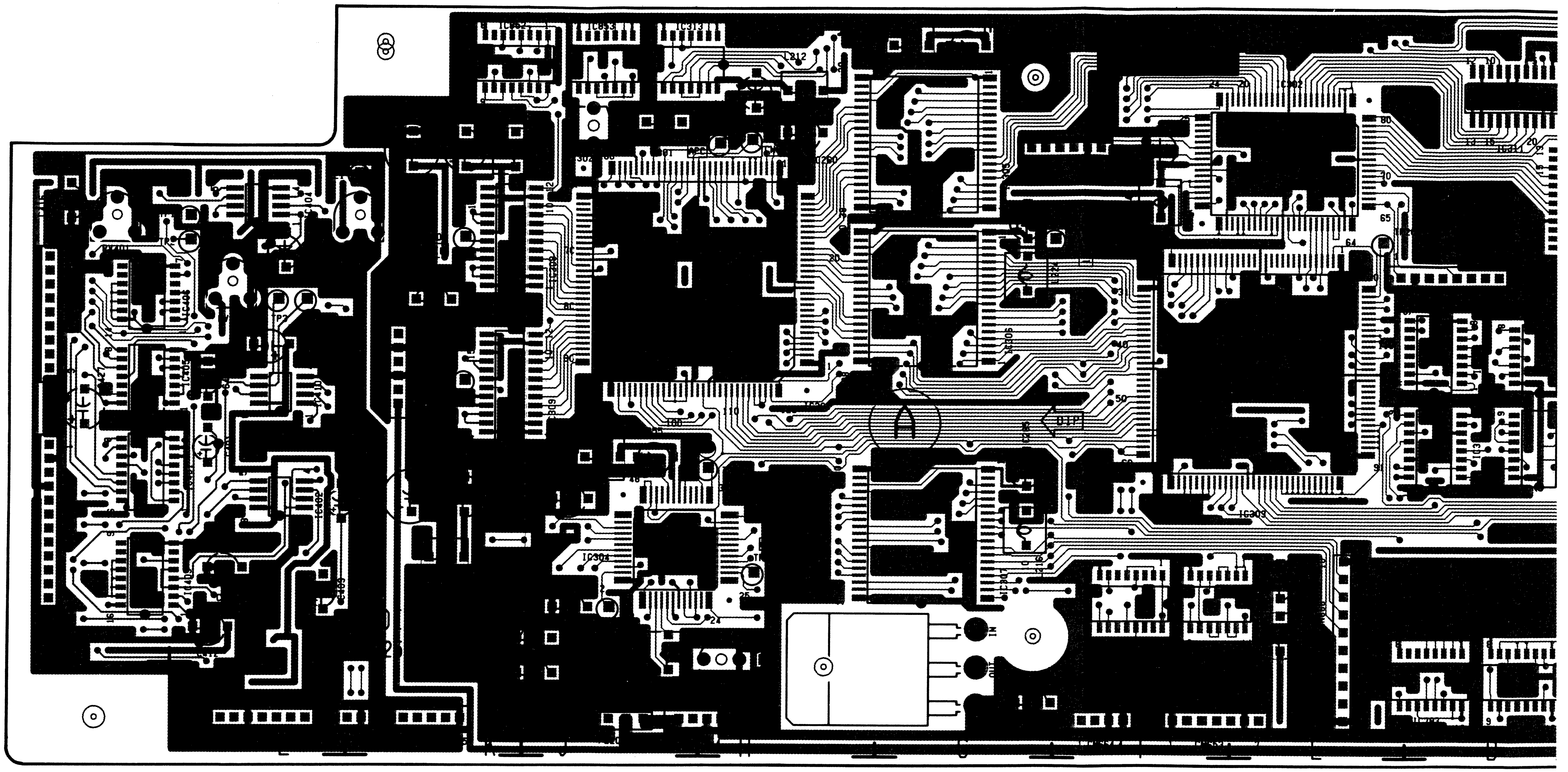
DI-12(3/3)

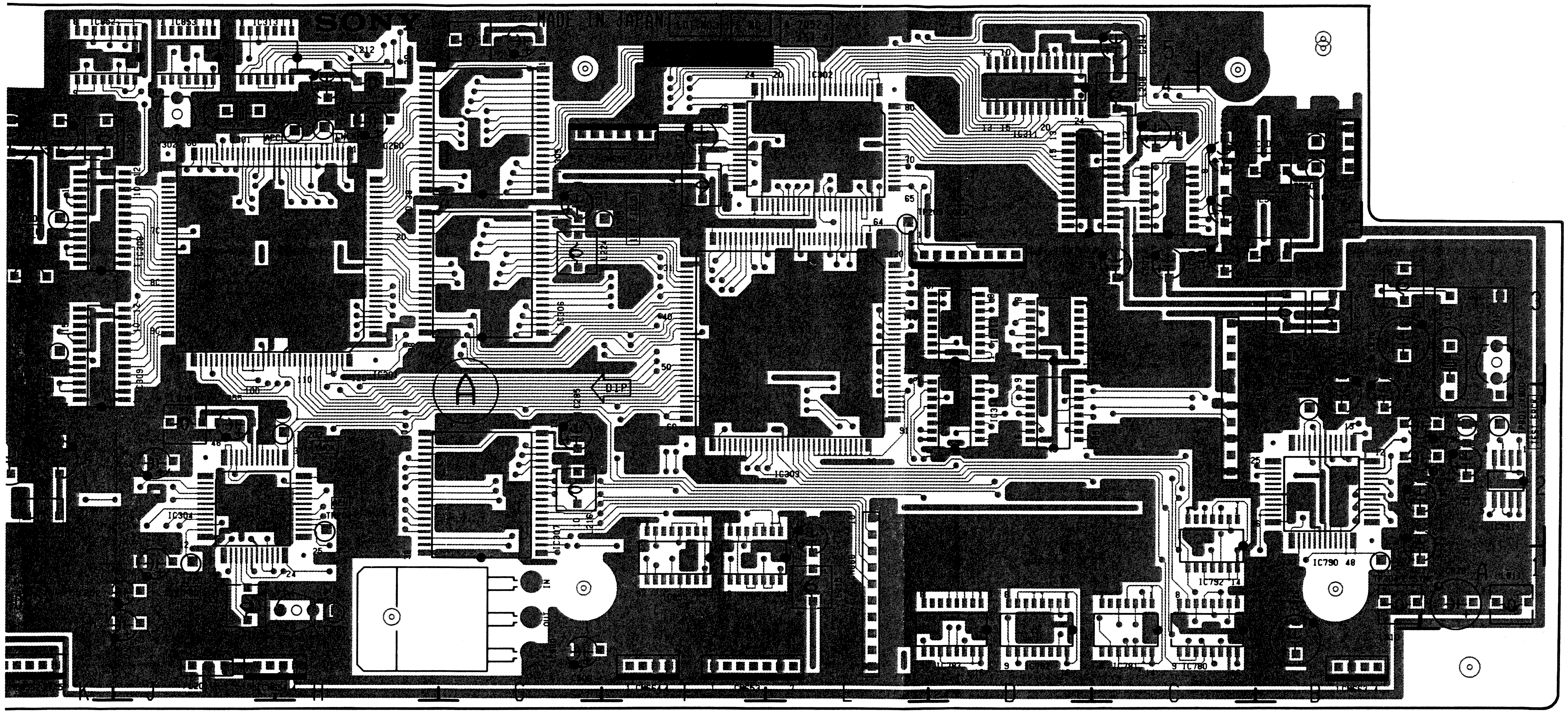
1-635-082-11, 12 (1)
EVO-9800P

DI-12 ; DIGITAL CHROMA NOISE REDUCER

DI-12(1-635-082-11, 12) A SIDE

CN 51	L-1	TP201	J-1
CN552	K-1	TP204	H-2
CN553	M-2	TP209	E-4
CN 54	M-3	TP500	K-3
CN 55	K-1	TP501	K-3
CN653	F-1	TP502	B-4
CN654	H-1	TP503	B-4
CN 55	F-4	TP704	B-1
CN 51	B-4	TP705	F-3
CN662	K-3		
CN663	B-1	X31	A-3
CN 54	F-1	X301	J-4
CN 55	D-3		
CV 1	A-3		
CV 01	H-1		
CV 02	J-4		
FL 1	J-1		
C301	H-3		
C302	E-4		
C3 3	E-2		
C3 4	J-2		
C308	J-3		
C309	J-2		
C3 0	C-4		
C3 1	D-4		
C312	D-3		
C313	J-5		
C3 5	D-2		
C4 1	L-2		
C402	L-2		
C403	L-1		
C4 4	L-4		
C4 5	L-3		
C406	L-3		
C410	L-3		
C5 0	G-1		
C501	C-3		
C780	C-1		
C7 1	C-1		
C7 2	D-1		
C783	D-1		
C790	B-1		
C7 1	A-2		
C7 2	C-1		
C850	D-3		
C851	D-2		
C8 2	K-5		
C8 3	J-5		
C854	F-1		
C855	F-1		
V 1	M-3		
V402	K-3		
V403	L-3		



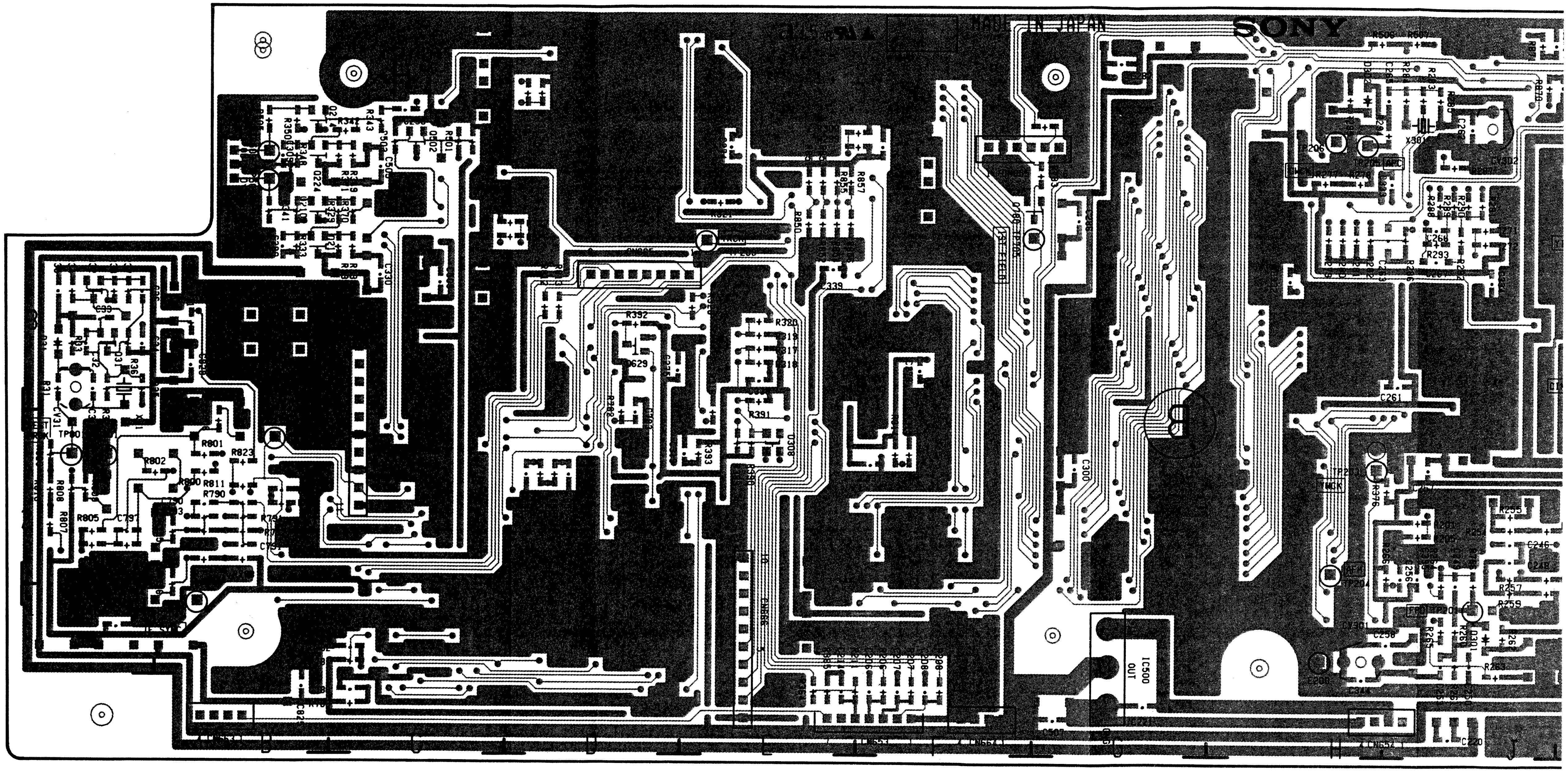

SONY
MADE IN JAPAN
IC302
IC311
IC303
IC304
IC306
IC307
IC790 48
IC792
IC780
L812
A
DIP
IN
OUT
K
J
H
G
F
E
D
C
B

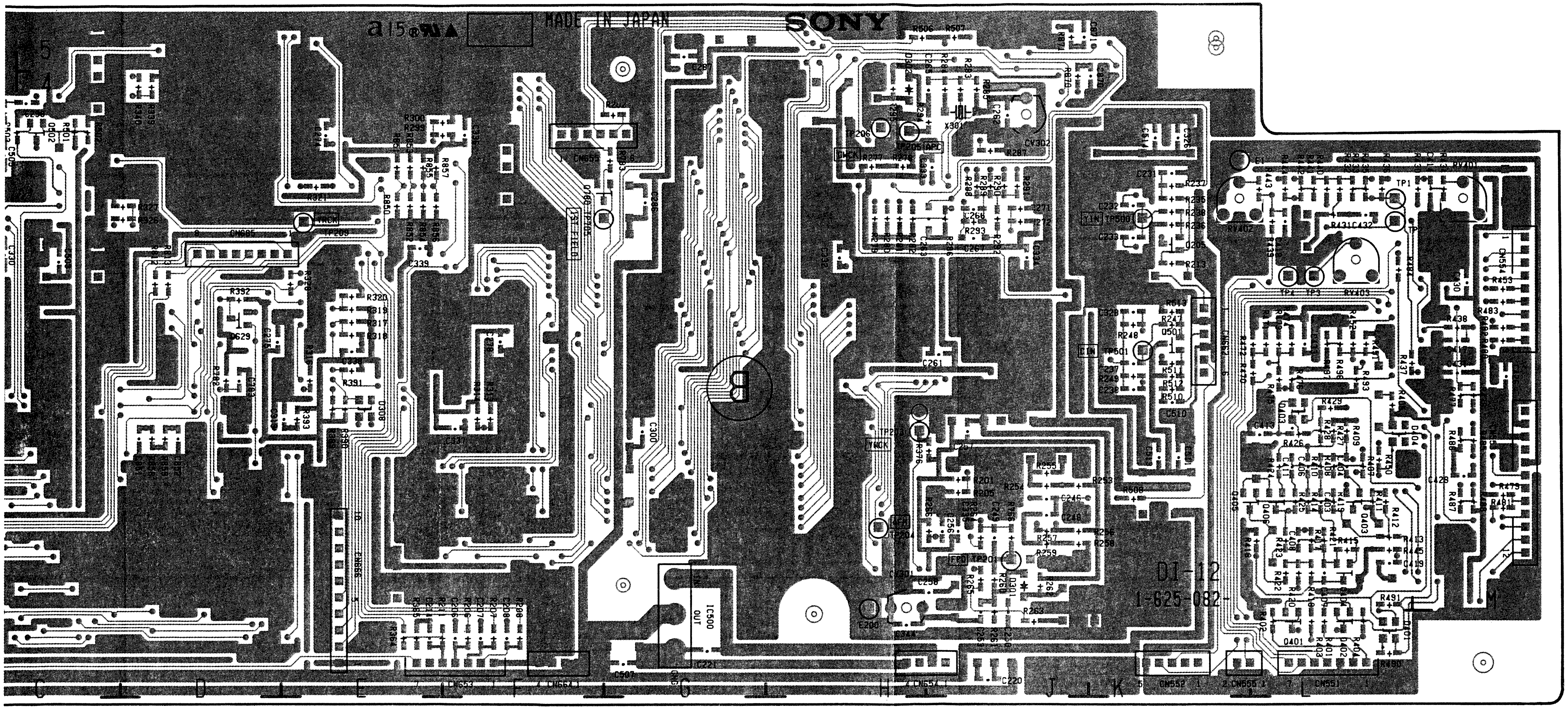
DI-12 A SIDE
1-635-082-11, 12(1)
EVO-9800P

A Side is the same as COMPONENT Side

2(1-635-082-11, 12) B SIDE

	A-3
01	J-1
02	H-4
08	E-2
01	L-1
03	L-2
	L-4
0	H-1
1	A-2
	A-3
	A-3
5	K-3
0	B-4
2	B-3
4	B-4
4	B-4
1	L-1
2	L-1
3	L-2
4	L-1
5	K-2
6	L-2
1	K-3
2	C-4
9	D-3
0	F-4
	L-4
	L-3
	L-3
	L-3
03	H-2
05	H-4
06	H-4
00	B-2
01	A-2


SONY
MADE IN JAPAN
IC500
OUT
R802
R801
R823
R800
R811
R790
R805
R807
R808
R392
R320
R391
R393
R857
R293
C261
C300
C339
C246
C258


MADE IN JAPAN
SONY
DI-12
1-625-082-
B
IC500
OUT
CN653
CN654
CN651
CN652
CN655
CN551
CN554
CN553
CN606
CN805
X301
TP1
TP3
TP4
RV401
RV402
RV403
E200
C
D
E
F
G
H
J
K
L
M

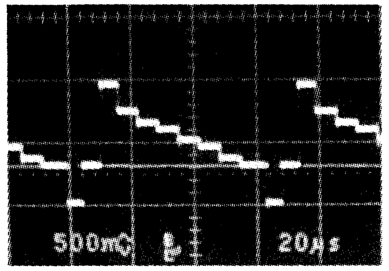
DI-12 B SIDE
1-635-082-11, 12 (1)
EVO-9800P

B Side is the same as SOLDER Side

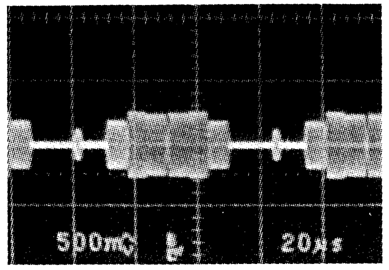
DI-13 (1/2) ; DIGITAL CNR INPUT/OUTPUT BUFFER

DI-13 (1/2)

① TP651 EE mode

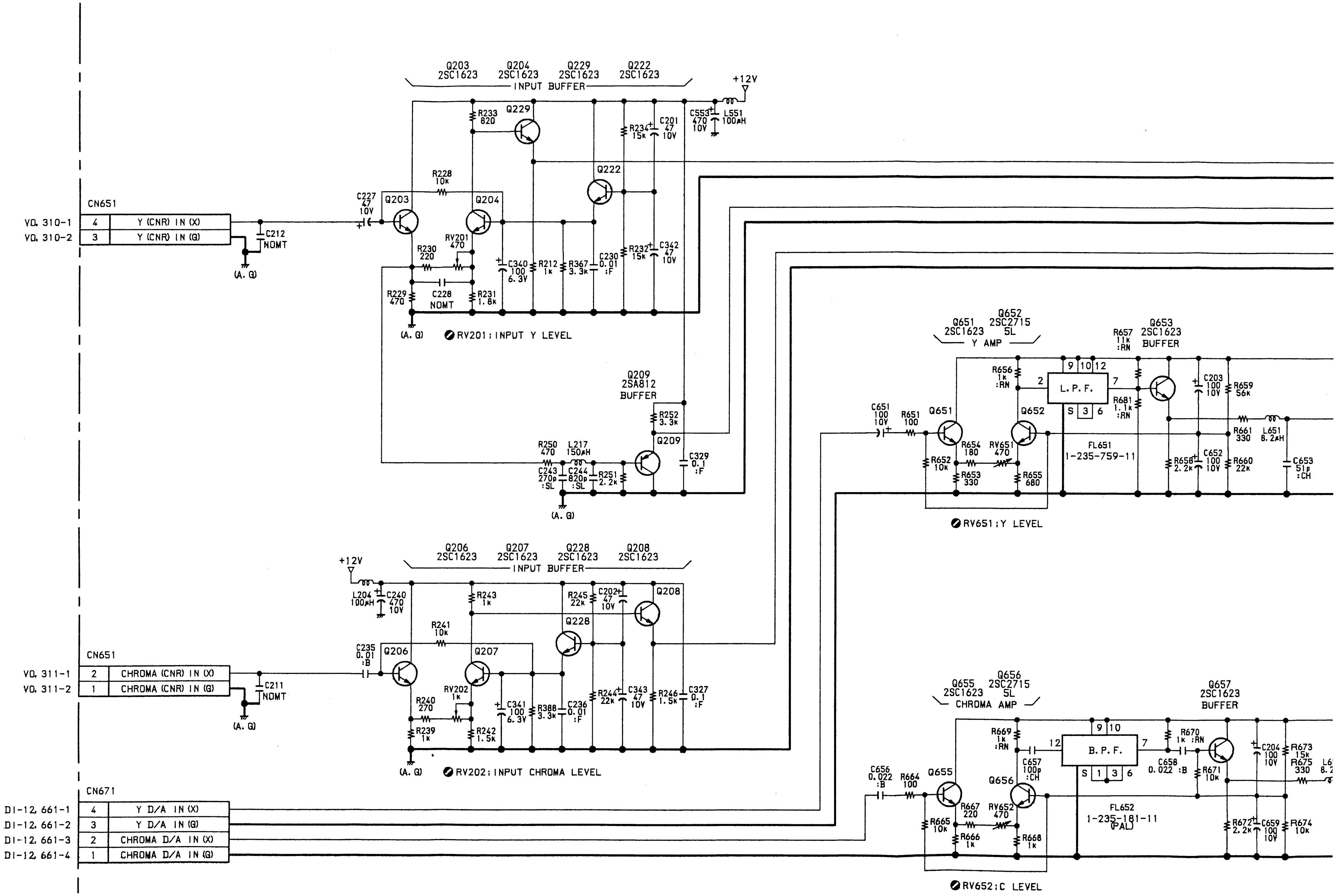


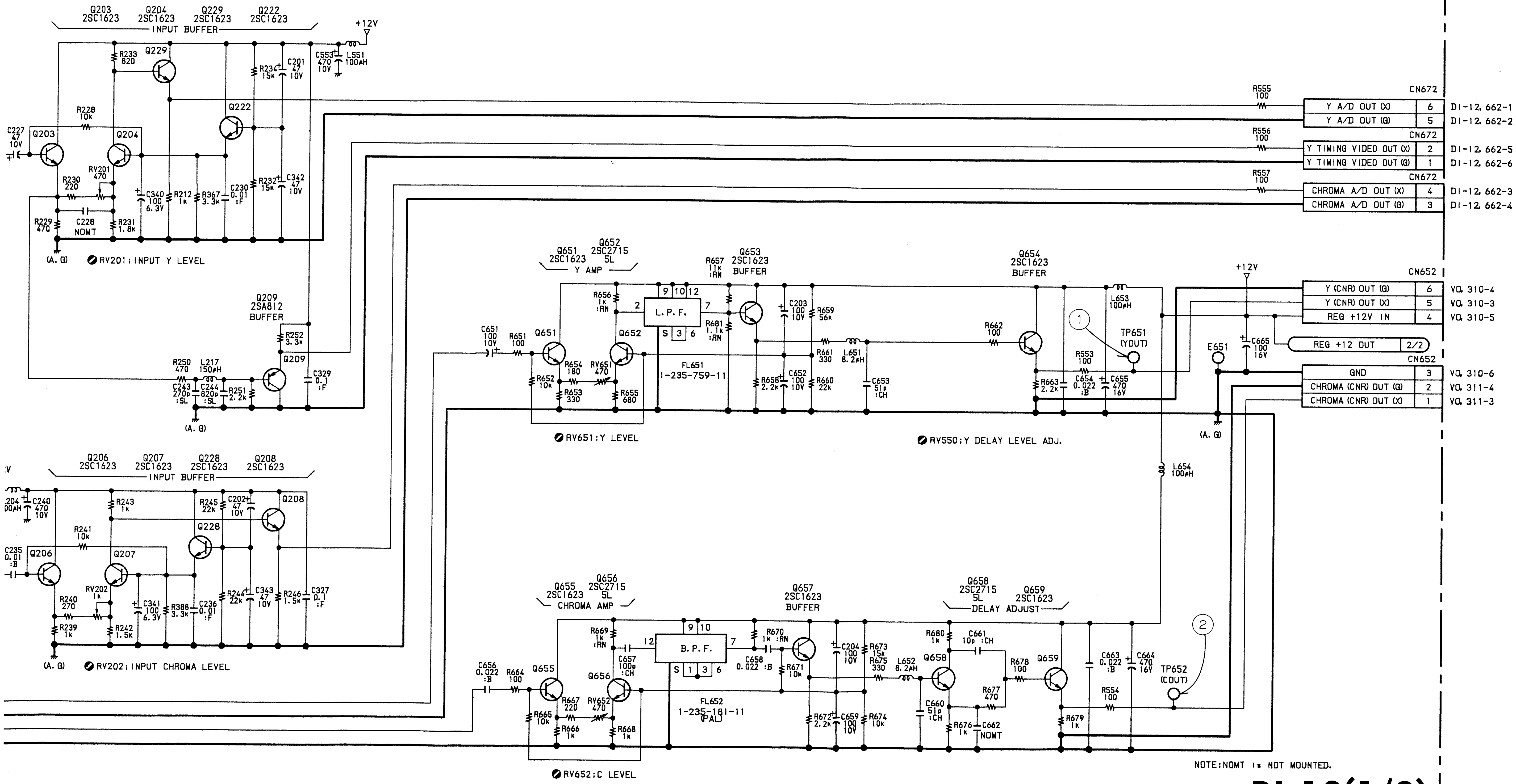
② TP652 EE mode



Measurement Condition

- Input Signal : Color Bars
- Cassette Tape : Alignment tape WR5-8CSE (Color Bars Signal)


Q203 2SC1623
Q204 2SC1623
Q229 2SC1623
Q222 2SC1623
INPUT BUFFER
+12V
C553 470 10V
L551 100μH
R233 820
R234 15k
C201 47 10V
R228 10k
C227 47 10V
CN651
VD, 310-1
VD, 310-2
4 Y (CNR) IN (X)
3 Y (CNR) IN (G)
C212 NOMT
(A. G)
R230 220
RV201 470
C340 100 6.3V
R212 1k
R367 3.3k
C230 0.01 :F
R232 15k
C342 47 10V
R229 470
C228 NOMT
R231 1.8k
RV201 ; INPUT Y LEVEL
Q209 2SA812 BUFFER
R252 3.3k
R250 470
L217 150μH
C243 270p :SL
C244 820p :SL
R251 2.2k
C329 0.1 :F
Q206 2SC1623
Q207 2SC1623
Q228 2SC1623
Q208 2SC1623
L204 100μH
C240 470 10V
R243 1k
R245 22k
C202 47 10V
R241 10k
C235 0.01 :B
VD, 311-1
VD, 311-2
2 CHROMA (CNR) IN (X)
1 CHROMA (CNR) IN (G)
C211 NOMT
R240 270
RV202 1k
C341 100 6.3V
R388 3.3k
C236 0.01 :F
R244 22k
C343 47 10V
R246 1.5k
C327 0.1 :F
R239 1k
R242 1.5k
RV202 ; INPUT CHROMA LEVEL
CN671
DI-12, 661-1
DI-12, 661-2
DI-12, 661-3
DI-12, 661-4
4 Y D/A IN (X)
3 Y D/A IN (G)
2 CHROMA D/A IN (X)
1 CHROMA D/A IN (G)
Q651 2SC1623
Q652 2SC2715 5L
Y AMP
R657 11k :RN
Q653 2SC1623 BUFFER
R656 1k :RN
L.P.F.
R681 1.1k :RN
C203 100 10V
R659 56k
C651 100 10V
R651 100
R652 10k
R654 180
RV651 470
R653 330
R655 680
FL651 1-235-759-11
R658 2.2k
C652 100 10V
R660 22k
R661 330
L651 8.2μH
C653 51p :CH
RV651 ; Y LEVEL
Q655 2SC1623
Q656 2SC2715 5L
CHROMA AMP
Q657 2SC1623 BUFFER
R669 1k :RN
C657 100p :CH
B.P.F.
R670 1k :RN
C658 0.022 :B
R671 10k
C204 100 10V
R673 15k
R675 330
C656 0.022 :B
R664 100
R665 10k
R667 220
RV652 470
R666 1k
R668 1k
FL652 1-235-181-11 (PAL)
R672 2.2k
C659 100 10V
R674 10k
RV652 ; C LEVEL

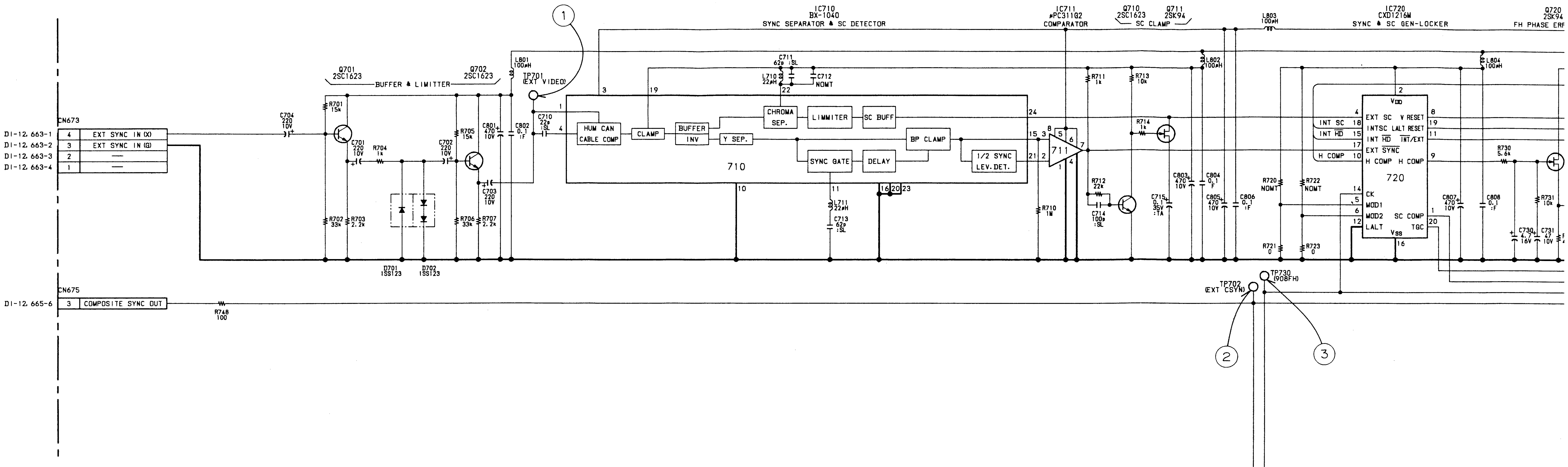

Q203 2SC1623
Q204 2SC1623
Q229 2SC1623
Q222 2SC1623
INPUT BUFFER
+12V
C553 470 10V
L551 100μH
R233 820
R234 15k
C201 47 10V
R228 10k
C227 47 10V
RV201 470
R230 220
C340 100 6.3V
R212 1k
R367 3.3k
C230 0.01 :F
R232 15k
C342 47 10V
R229 470
C228 NOMT
R231 1.8k
(A.G)
RV201:INPUT Y LEVEL
Q209 2SA812 BUFFER
R252 3.3k
R250 470
L217 150μH
C243 270p :SL
C244 820p :SL
R251 2.2k
C329 0.1 :F
R555 100
R556 100
R557 100
CN672
Y A/D OUT (X) 6
Y A/D OUT (G) 5
Y TIMING VIDEO OUT (X) 2
Y TIMING VIDEO OUT (G) 1
CHROMA A/D OUT (X) 4
CHROMA A/D OUT (G) 3
DI-12, 662-1
DI-12, 662-2
DI-12, 662-5
DI-12, 662-6
DI-12, 662-3
DI-12, 662-4
Q651 2SC1623
Q652 2SC2715 5L
Y AMP
R657 11k :RN
Q653 2SC1623 BUFFER
Q654 2SC1623 BUFFER
R656 1k :RN
L.P.F.
9 10 12 2 7 S 3 6
R681 1.1k :RN
C203 100 10V
R659 56k
L653 100μH
C651 100 10V
R651 100
R654 180
RV651 470
R652 10k
R653 330
R655 680
FL651 1-235-759-11
R662 100
R661 330
L651 8.2μH
C652 100 10V
R658 2.2k
R660 22k
C653 51p :CH
TP651 (YOUT)
R553 100
R663 2.2k
C654 0.022 :B
C655 470 16V
C665 100 16V
E651
RV651:Y LEVEL
RV550:Y DELAY LEVEL ADJ.
CN652
Y (CNR) OUT (G) 6
Y (CNR) OUT (X) 5
REG +12V IN 4
REG +12 OUT 2/2
GND 3
CHROMA (CNR) OUT (G) 2
CHROMA (CNR) OUT (X) 1
VQ, 310-4
VQ, 310-3
VQ, 310-5
VQ, 310-6
VQ, 311-4
VQ, 311-3
L654 100μH
Q206 2SC1623
Q207 2SC1623
Q228 2SC1623
Q208 2SC1623
INPUT BUFFER
C240 470 10V
R243 1k
R245 22k
C202 47 10V
R241 10k
C235 0.01 :B
RV202 1k
R240 270
C341 100 6.3V
R388 3.3k
C236 0.01 :F
R244 22k
C343 47 10V
R246 1.5k
C327 0.1 :F
R239 1k
R242 1.5k
RV202:INPUT CHROMA LEVEL
Q655 2SC1623
Q656 2SC2715 5L
CHROMA AMP
Q657 2SC1623 BUFFER
Q658 2SC2715 5L
Q659 2SC1623
DELAY ADJUST
R669 1k :RN
B.P.F.
9 10 12 7 S 1 3 6
R670 1k :RN
C204 100 10V
R673 15k
R675 330
R680 1k
C661 10p :CH
C657 100p :CH
C658 0.022 :B
L652 8.2μH
R678 100
C663 0.022 :B
C664 470 16V
TP652 (COUT)
C656 0.022 :B
R664 100
R671 10k
R677 470
R554 100
R665 10k
R667 220
RV652 470
FL652 1-235-181-11 (PAL)
C660 51p :CH
R672 2.2k
C659 100 10V
R674 10k
R676 1k
C662 NOMT
R679 1k
R666 1k
R668 1k
RV652:C LEVEL

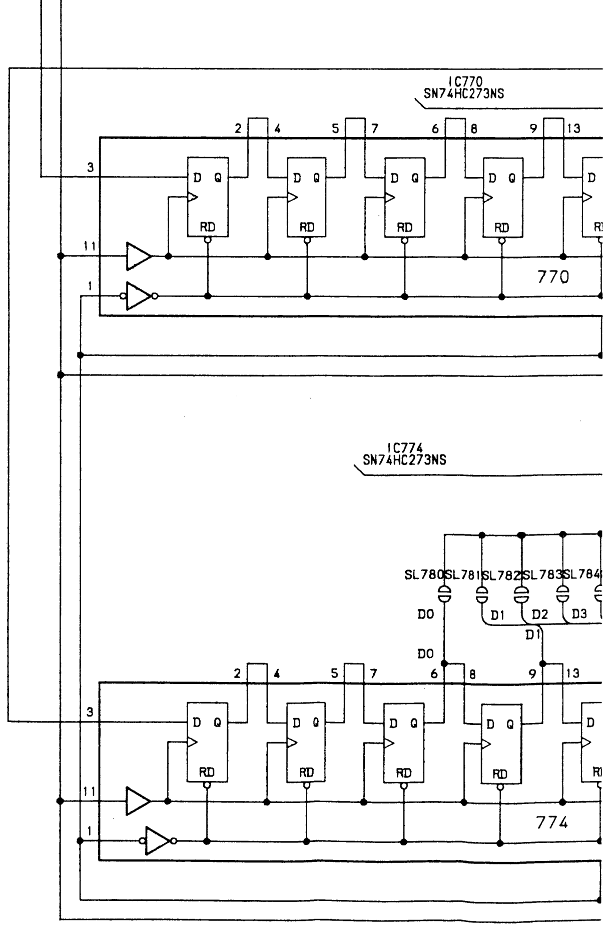
NOTE:NOMT is NOT MOUNTED.

DI-13(1/2)

1-635-083-11(1)
EVO-9800P

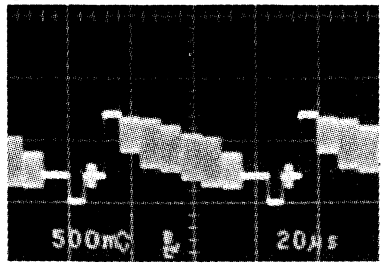
D| .3 (2/2) ; EXTERNAL/INTERNAL GENERATOR LOCKER


CN673
DI-12, 663-1
DI-12, 663-2
DI-12, 663-3
DI-12, 663-4
EXT SYNC IN (X)
EXT SYNC IN (G)
Q701 2SC1623
Q702 2SC1623
BUFFER & LIMITTER
TP701 (EXT VIDEO)
L801 100µH
D701 1SS123
D702 1SS123
IC710 BX-1040 SYNC SEPARATOR & SC DETECTOR
HUM CAN CABLE COMP
CLAMP
BUFFER INV
Y SEP.
CHROMA SEP.
LIMMITER
SC BUFF
BP CLAMP
SYNC GATE
DELAY
1/2 SYNC LEV. DET.
710
IC711 µPC311G2 COMPARATOR
711
Q710 2SC1623
Q711 2SK94
SC CLAMP
L803 100µH
L802 100µH
L804 100µH
IC720 CXD1216M SYNC & SC GEN-LOCKER
720
VDD
EXT SC
V RESET
INTSC LALT RESET
INT HD
INT/EXT
EXT SYNC
H COMP
CK
MOD1
MOD2
SC COMP
LALT
TGC
VSS
INT SC
INT HD
H COMP
Q720 2SK94
FH PHASE ERR
CN675
DI-12, 665-6
COMPOSITE SYNC OUT
R748 100
TP702 (EXT CSYN)
TP730 (90BFH)
①
②
③

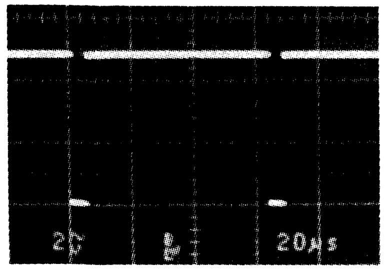

IC770 SN74HC273NS
770
IC774 SN74HC273NS
774
SL780
SL781
SL782
SL783
SL784
D0
D1
D2
D3
D Q
RD

DI-13 (2/2)

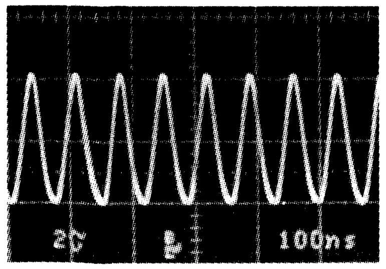
① TP701 EE mode



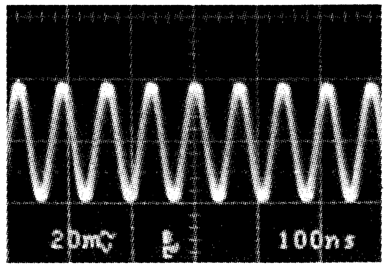
② TP702 EE mode



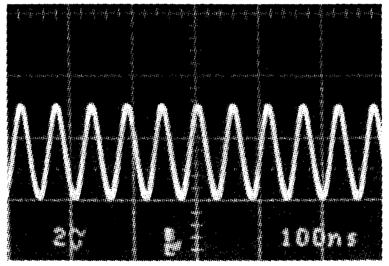
③ TP730 EE mode 14.18MHz



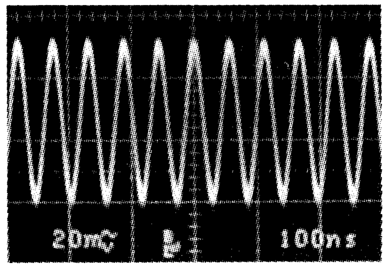
④ TP731 EE mode 14.18MHz



⑤ TP760 EE mode 17.73MHz

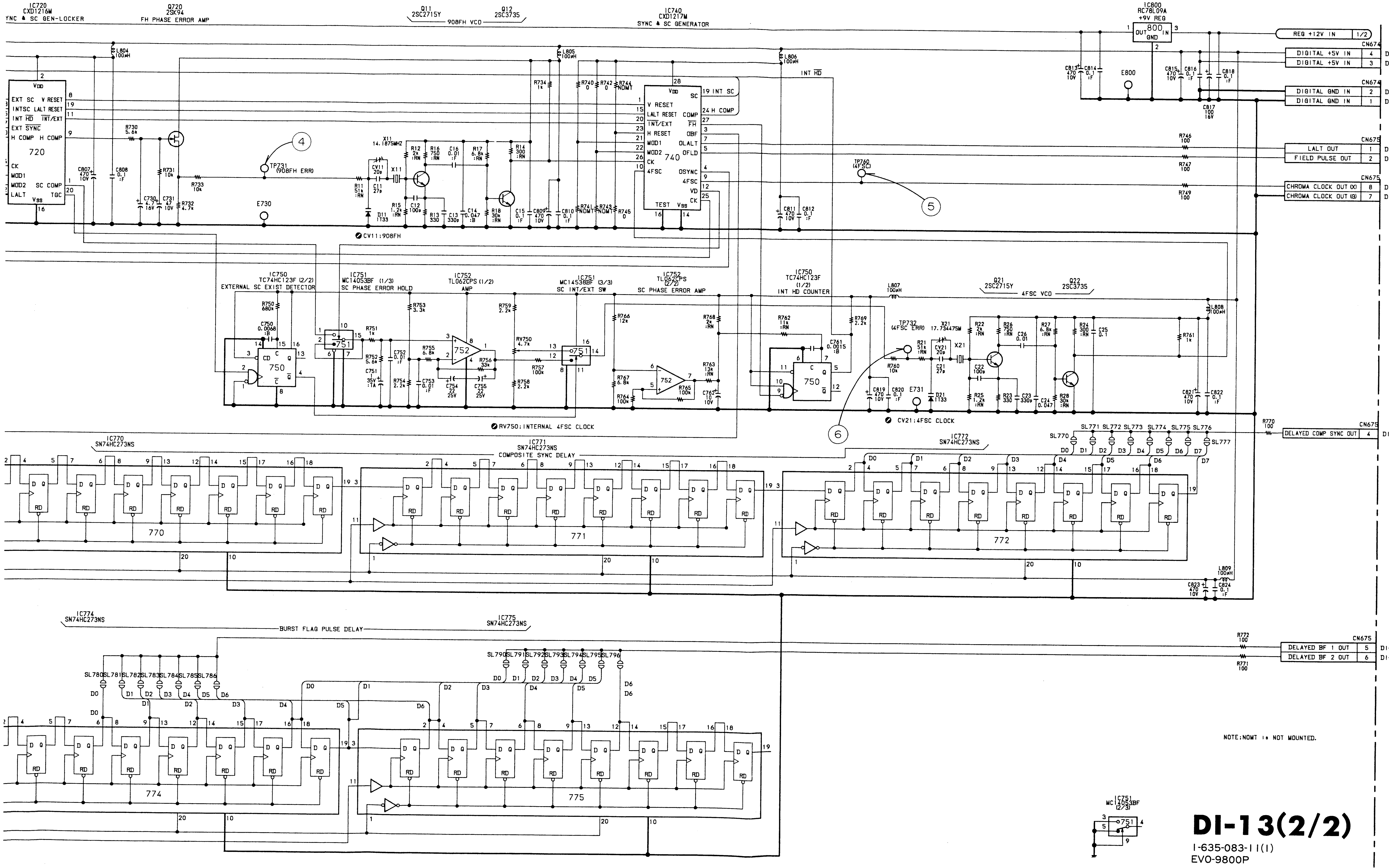


⑥ TP732 EE mode 17.73MHz



Measurement Condition

- Input Signal : Color Bars (SYNC IN)


IC720 CXD1216M SYNC & SC GEN-LOCKER
Q720 2SK94 FH PHASE ERROR AMP
Q11 2SC2715Y
Q12 2SC3735
908FH VCO
IC740 CXD1217M SYNC & SC GENERATOR
IC800 RC78L09A +9V REG
REG +12V IN
DIGITAL +5V IN
DIGITAL GND IN
CN674
DI-12, 664-1
DI-12, 664-2
DI-12, 664-3
DI-12, 664-4
LALT OUT
FIELD PULSE OUT
CN675
DI-12, 655-8
DI-12, 655-7
CHROMA CLOCK OUT (X)
CHROMA CLOCK OUT (Q)
DI-12, 655-1
DI-12, 655-2
TP731 (908FH ERR)
TP760 (4FSC)
E730
E731
E800
X11 14.1875MHZ
CV11:908FH
IC750 TC74HC123F (2/2) EXTERNAL SC EXIST DETECTOR
IC751 MC14053BF (1/3) SC PHASE ERROR HOLD
IC752 TL062CPS (1/2) AMP
IC751 MC14053BF (3/3) SC INT/EXT SW
IC752 TL062CPS (2/2) SC PHASE ERROR AMP
IC750 TC74HC123F (1/2) INT HD COUNTER
Q21 2SC2715Y
Q22 2SC3735
4FSC VCO
TP732 (4FSC ERR)
X21 17.734475M
RV750:INTERNAL 4FSC CLOCK
CV21:4FSC CLOCK
IC770 SN74HC273NS
IC771 SN74HC273NS COMPOSITE SYNC DELAY
IC772 SN74HC273NS
DELAYED COMP SYNC OUT
DI-12, 665-5
IC774 SN74HC273NS
BURST FLAG PULSE DELAY
IC775 SN74HC273NS
DELAYED BF 1 OUT
DELAYED BF 2 OUT
DI-12, 665-4
DI-12, 665-3
IC751 MC14053BF (2/3)
NOTE:NOMT is NOT MOUNTED.
720
740
750
751
752
770
771
772
774
775
800

DI-13(2/2)

1-635-083-11(1)
EVO-9800P

13-42

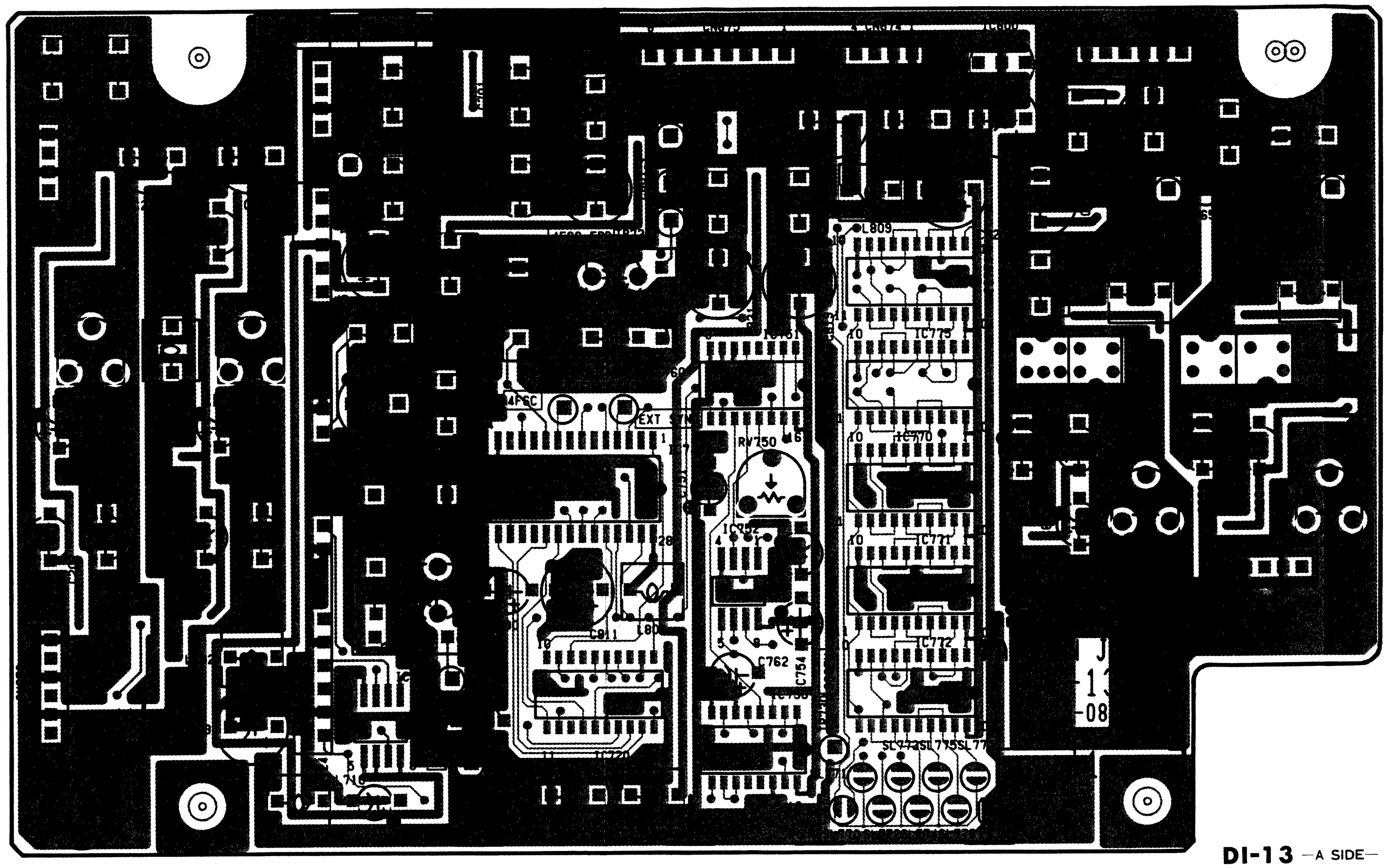
l-13; EXTERNAL/INTERNAL GENERATOR LOCKER

DI-13(1-635-083-11) A SIDE

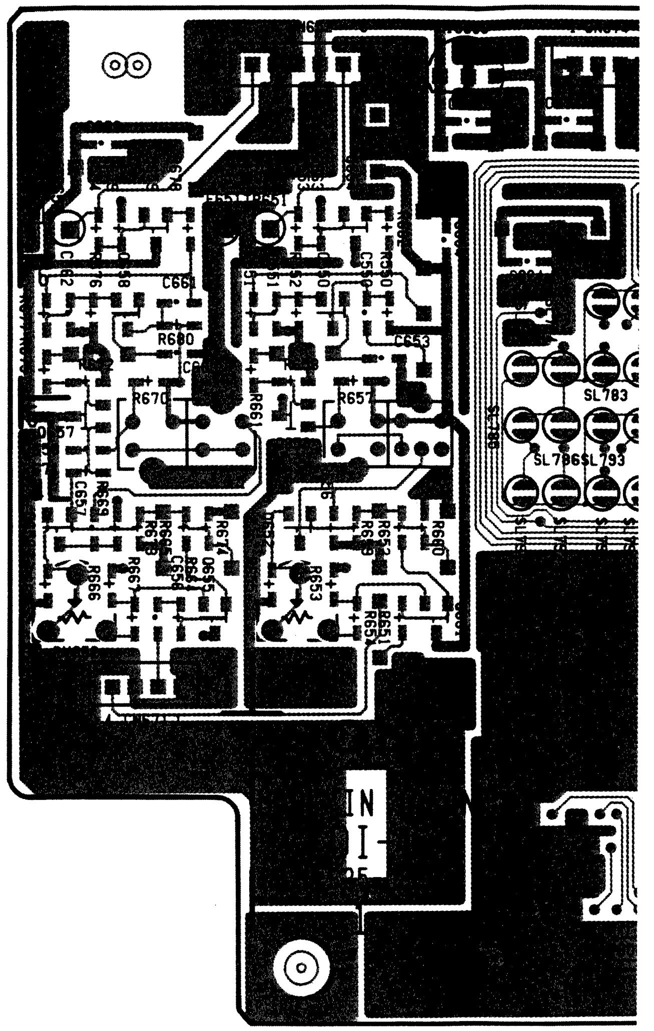
N651	H-7
CN652	B-7
N671	A-3
N672	H-2
N673	F-7
CN674	C-7
N675	D-7
V11	F-3
CV21	E-6
551	A-7
E730	F-1
E731	E-7
300	D-7
FL651	B-5
FL652	A-5
710	F-6
IC711	F-2
IC720	E-1
740	E-4
750	D-2
IC751	D-5
IC752	D-4
770	C-4
771	C-3
IC772	C-3
774	C-6
775	C-5
800	B-7
V201	G-5
V202	H-5
RV651	B-3
RV652	A-3
V750	D-4
TP651	B-7
TP652	A-7
P701	F-7
P702	E-5
TP703	C-2
TP731	F-2
P732	E-6
P760	E-5
11	F-4
21	E-5

DI-13(1-635-083-11) B SIDE

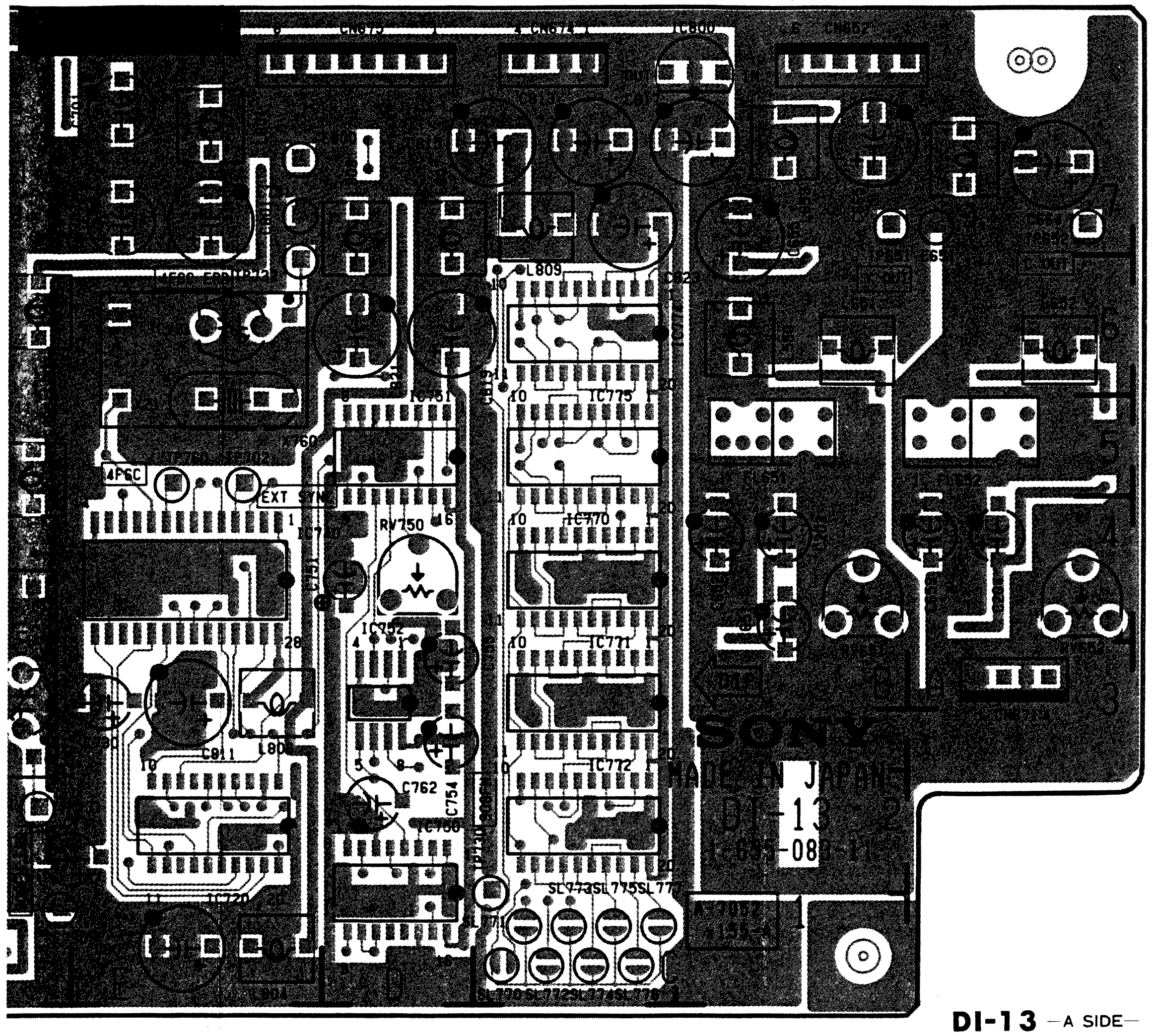
D11	F-4
D21	E-6
D701	E-7
D702	F-7
Q11	F-3
Q12	F-4
Q21	E-6
Q22	F-6
Q203	G-6
Q204	G-4
Q206	H-6
Q207	H-4
Q208	H-3
Q209	G-4
Q222	G-4
Q228	H-4
Q229	G-3
Q550	B-6
Q651	B-4
Q652	B-4
Q653	B-5
Q654	B-7
Q655	A-4
Q656	A-4
Q657	A-5
Q658	A-6
Q659	A-7
Q701	F-7
Q702	F-6
Q710	F-2
Q711	F-1
Q720	E-2


L809
IC775
IC770
IC771
IC772
IC752
RV750
EXT
C754
C762
C811
IC720
SL773
SL775

DI-13 —A SIDE—
1-635-083-11(1)
EVO-9800P

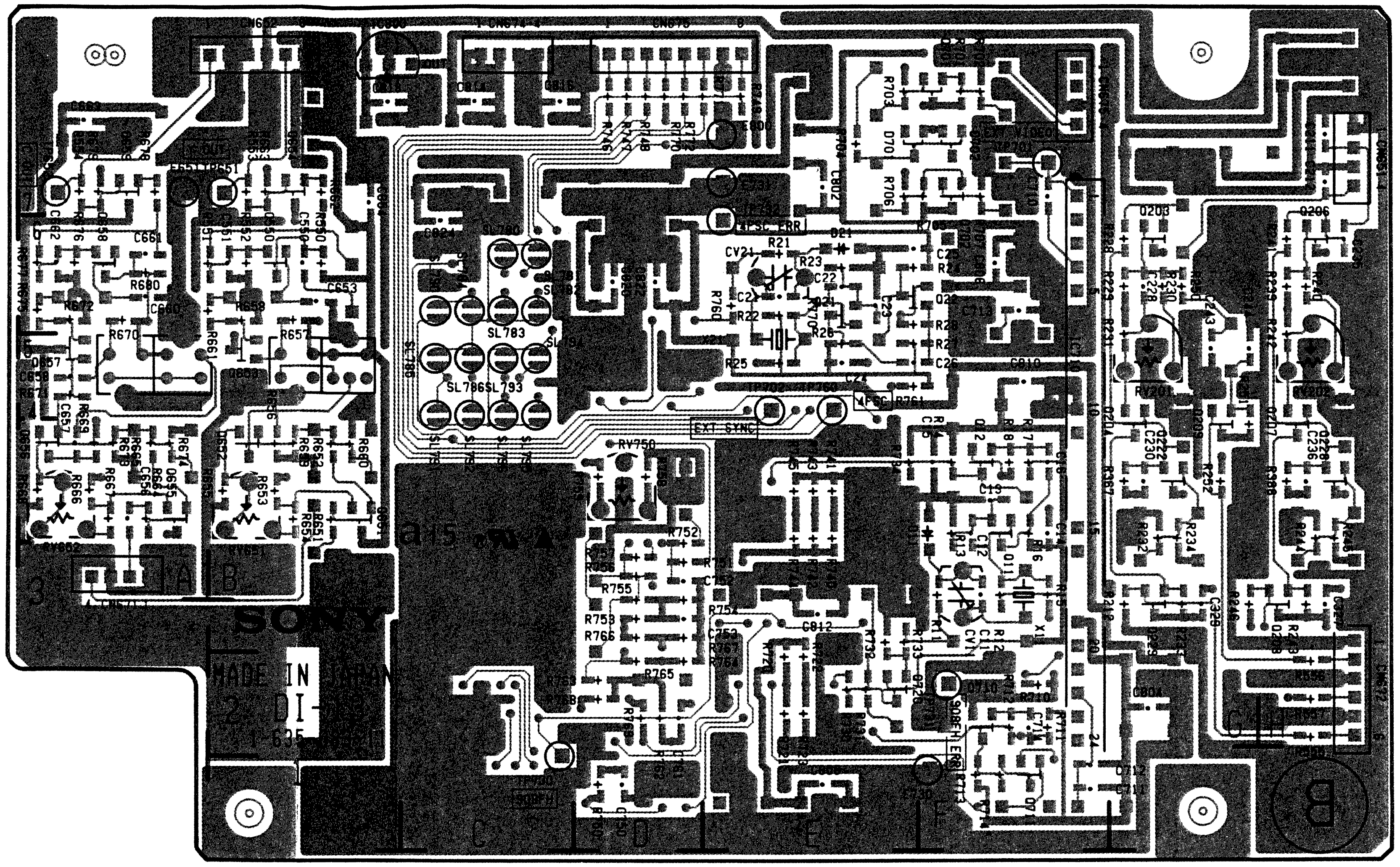

R680
R670
C661
R657
C653
SL783
SL786
SL793
R653

A Side is the same as COMPONENT Side


SONY
MADE IN JAPAN
DI-13 2
IC770
IC771
IC772
IC775
RV750
C811
C762
C754
EXT SYNC
4FSC

DI-13 —A SIDE—
1-635-083-11(1)
EVO-9800P

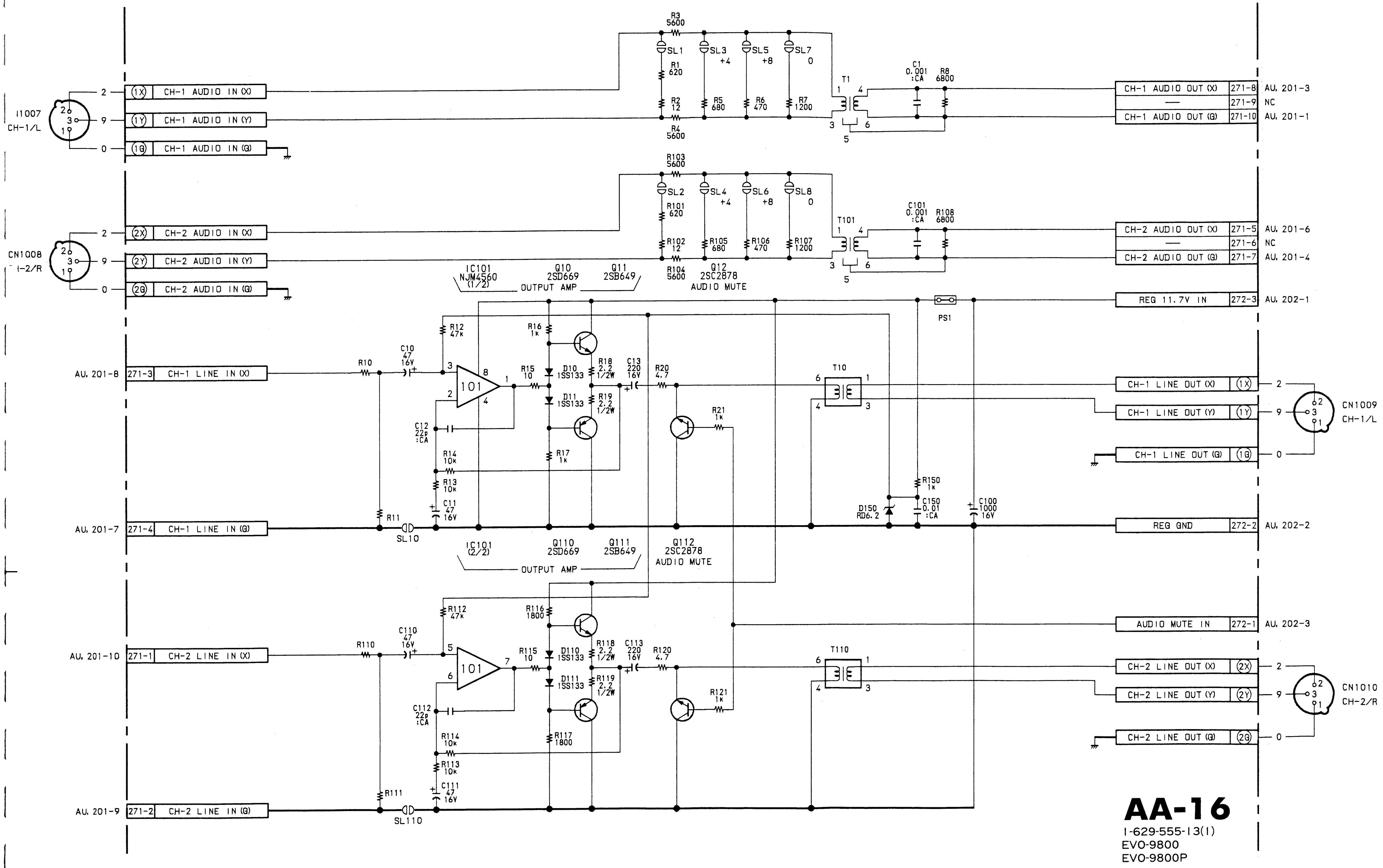
A Side is the same as COMPONENT Side


SONY
MADE IN JAPAN
DI-13
SL783
SL786
SL793
RV750
R752
R755
R758
R765
R766
C812
EXT SYNC
4FSC
R21
R22
R23
R25
CV21
C22
R680
R670
R657
R658
C661
C653
R666
R653
R703
R706
Q203
Q206
C230
C236
R230
R234

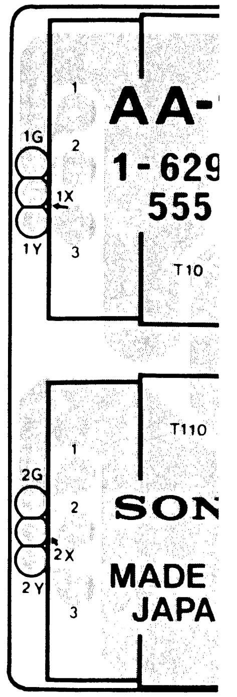
DI-13 —B SIDE—
1-635-083-11(1)
EVO-9800P

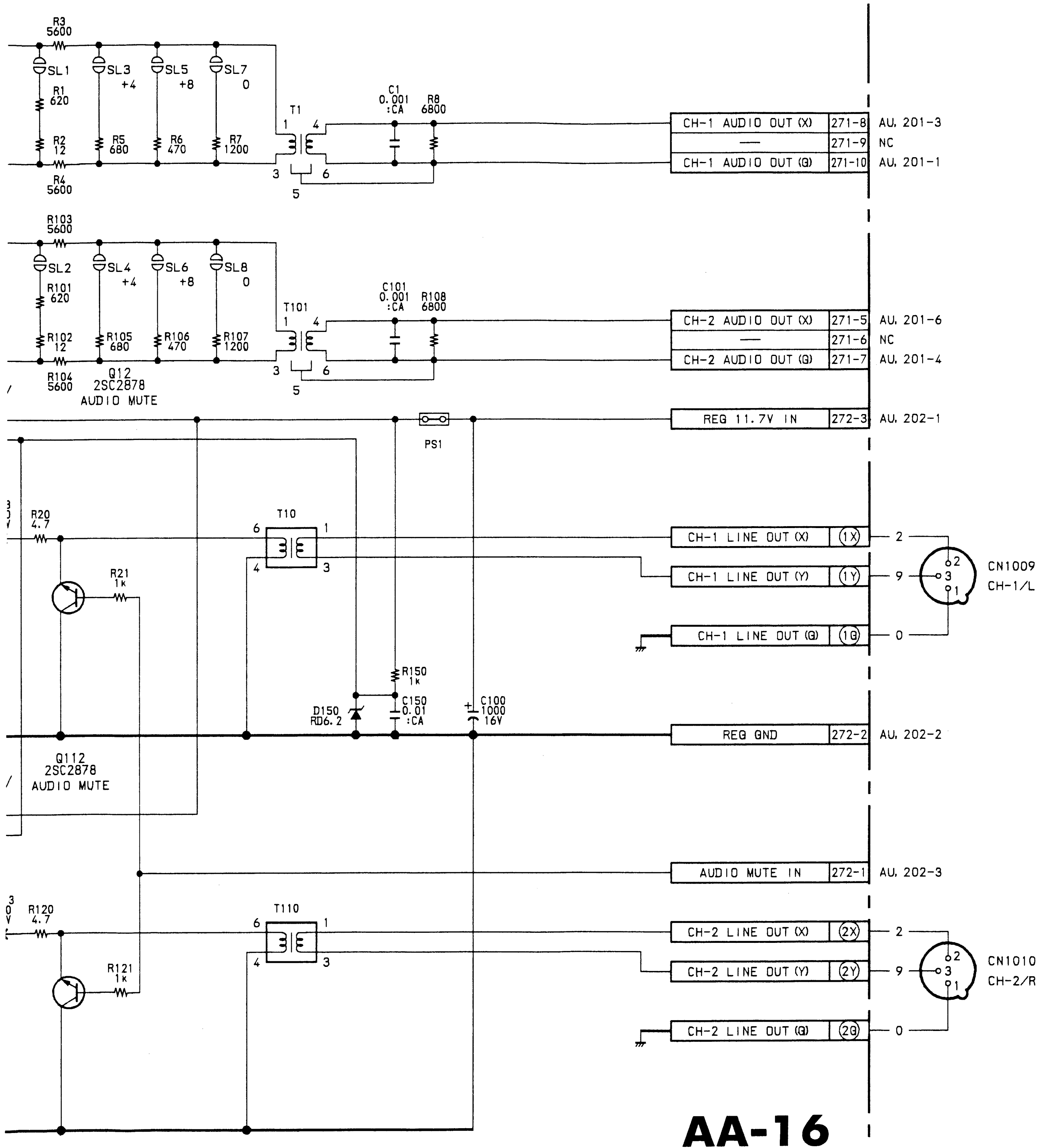
B Side is the same as SOLDER Side

6 XLR INPUT/OUTPUT AMPLIFIER


CN1007
CH-1/L
CH-1 AUDIO IN (X)
CH-1 AUDIO IN (Y)
CH-1 AUDIO IN (G)
CN1008
CH-2/R
CH-2 AUDIO IN (X)
CH-2 AUDIO IN (Y)
CH-2 AUDIO IN (G)
R3 5600
R1 620
R2 12
R4 5600
SL1
SL3 +4
SL5 +8
SL7 0
R5 680
R6 470
R7 1200
T1
C1 0.001 :CA
R8 6800
R103 5600
R101 620
R102 12
R104 5600
SL2
SL4 +4
SL6 +8
SL8 0
R105 680
R106 470
R107 1200
T101
C101 0.001 :CA
R108 6800
CH-1 AUDIO OUT (X) 271-8 AU, 201-3
271-9 NC
CH-1 AUDIO OUT (G) 271-10 AU, 201-1
CH-2 AUDIO OUT (X) 271-5 AU, 201-6
271-6 NC
CH-2 AUDIO OUT (G) 271-7 AU, 201-4
IC101 NJM4560 (1/2)
Q10 2SD669
Q11 2SB649
OUTPUT AMP
Q12 2SC2878
AUDIO MUTE
REG 11.7V IN 272-3 AU, 202-1
PS1
AU, 201-8 271-3 CH-1 LINE IN (X)
R10
C10 47 16V
R12 47k
R16 1k
R15 10
D10 1SS133
D11 1SS133
R18 2.2 1/2W
R19 2.2 1/2W
C13 220 16V
R20 4.7
C12 22p :CA
R14 10k
R13 10k
R17 1k
R21 1k
T10
CH-1 LINE OUT (X)
CH-1 LINE OUT (Y)
CH-1 LINE OUT (G)
CN1009
CH-1/L
R150 1k
D150 RD6.2
C150 0.01 :CA
C100 1000 16V
AU, 201-7 271-4 CH-1 LINE IN (G)
R11
C11 47 16V
SL10
REG GND 272-2 AU, 202-2
IC101 (2/2)
Q110 2SD669
Q111 2SB649
OUTPUT AMP
Q112 2SC2878
AUDIO MUTE
R112 47k
R116 1800
AUDIO MUTE IN 272-1 AU, 202-3
AU, 201-10 271-1 CH-2 LINE IN (X)
R110
C110 47 16V
R115 10
D110 1SS133
D111 1SS133
R118 2.2 1/2W
R119 2.2 1/2W
C113 220 16V
R120 4.7
C112 22p :CA
R114 10k
R113 10k
R117 1800
R121 1k
T110
CH-2 LINE OUT (X)
CH-2 LINE OUT (Y)
CH-2 LINE OUT (G)
CN1010
CH-2/R
AU, 201-9 271-2 CH-2 LINE IN (G)
R111
C111 47 16V
SL110

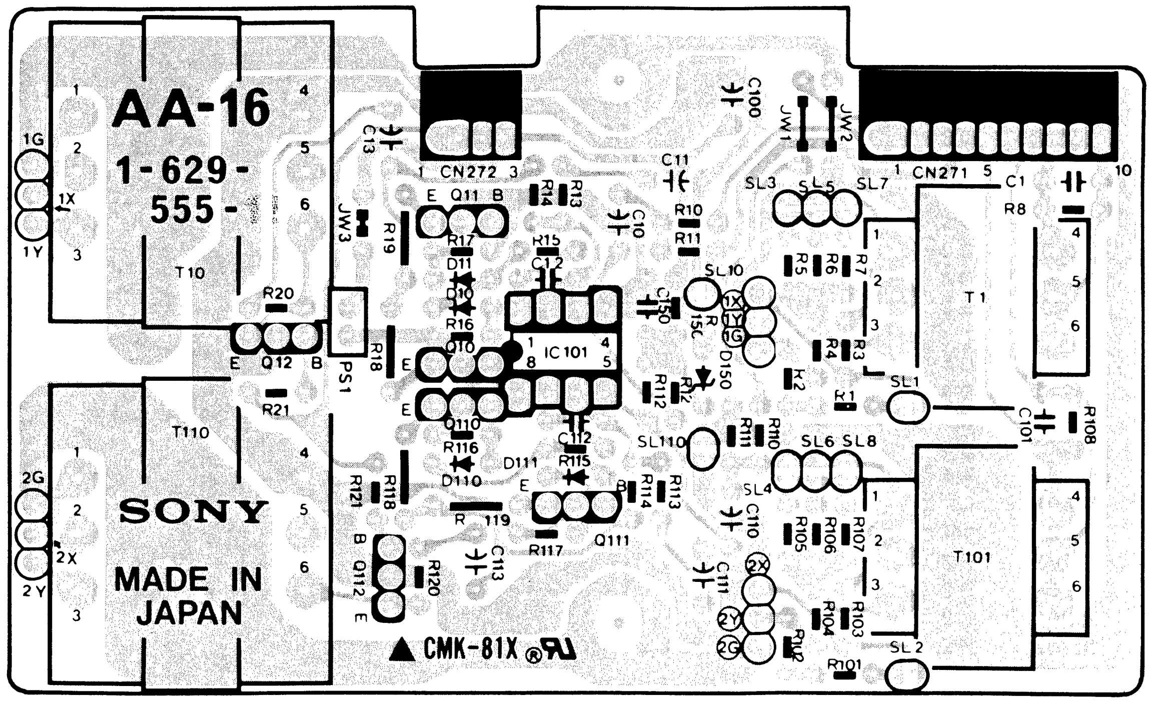
AA-16
1-629-555-13(1)
EVO-9800
EVO-9800P


1G
1X
1Y
AA-
1-629
555
T10
T110
2G
2X
2Y
SON
MADE
JAPA


R3 5600
SL1
SL3 +4
SL5 +8
SL7 0
R1 620
R2 12
R5 680
R6 470
R7 1200
R4 5600
T1
C1 0.001 :CA
R8 6800
CH-1 AUDIO OUT (X)
271-8
AU, 201-3
271-9
NC
CH-1 AUDIO OUT (G)
271-10
AU, 201-1
R103 5600
SL2
SL4 +4
SL6 +8
SL8 0
R101 620
R102 12
R105 680
R106 470
R107 1200
R104 5600
T101
C101 0.001 :CA
R108 6800
CH-2 AUDIO OUT (X)
271-5
AU, 201-6
271-6
NC
CH-2 AUDIO OUT (G)
271-7
AU, 201-4
Q12 2SC2878 AUDIO MUTE
PS1
REG 11.7V IN
272-3
AU, 202-1
R20 4.7
T10
R21 1k
CH-1 LINE OUT (X)
1X
CH-1 LINE OUT (Y)
1Y
CH-1 LINE OUT (G)
1G
CN1009 CH-1/L
R150 1k
C150 0.01 :CA
D150 RD6.2
C100 1000 16V
REG GND
272-2
AU, 202-2
Q112 2SC2878 AUDIO MUTE
AUDIO MUTE IN
272-1
AU, 202-3
R120 4.7
T110
R121 1k
CH-2 LINE OUT (X)
2X
CH-2 LINE OUT (Y)
2Y
CH-2 LINE OUT (G)
2G
CN1010 CH-2/R

AA-16
1-629-555-13(1)
EVO-9800
EVO-9800P

AA-16 ; XLR INPUT/OUTPUT AMPLIFIER


AA-16
1-629-555-
SONY
MADE IN JAPAN
CMK-81X
CN272
CN271
T10
T110
T1
T101
IC101
Q11
Q12
Q110
Q111
Q112
PS1
JW1
JW2
JW3
SL1
SL2
SL3
SL5
SL7
SL6
SL8
SL4
SL10
SL110
D150
D11
D110
D111
1G
1X
1Y
2G
2X
2Y

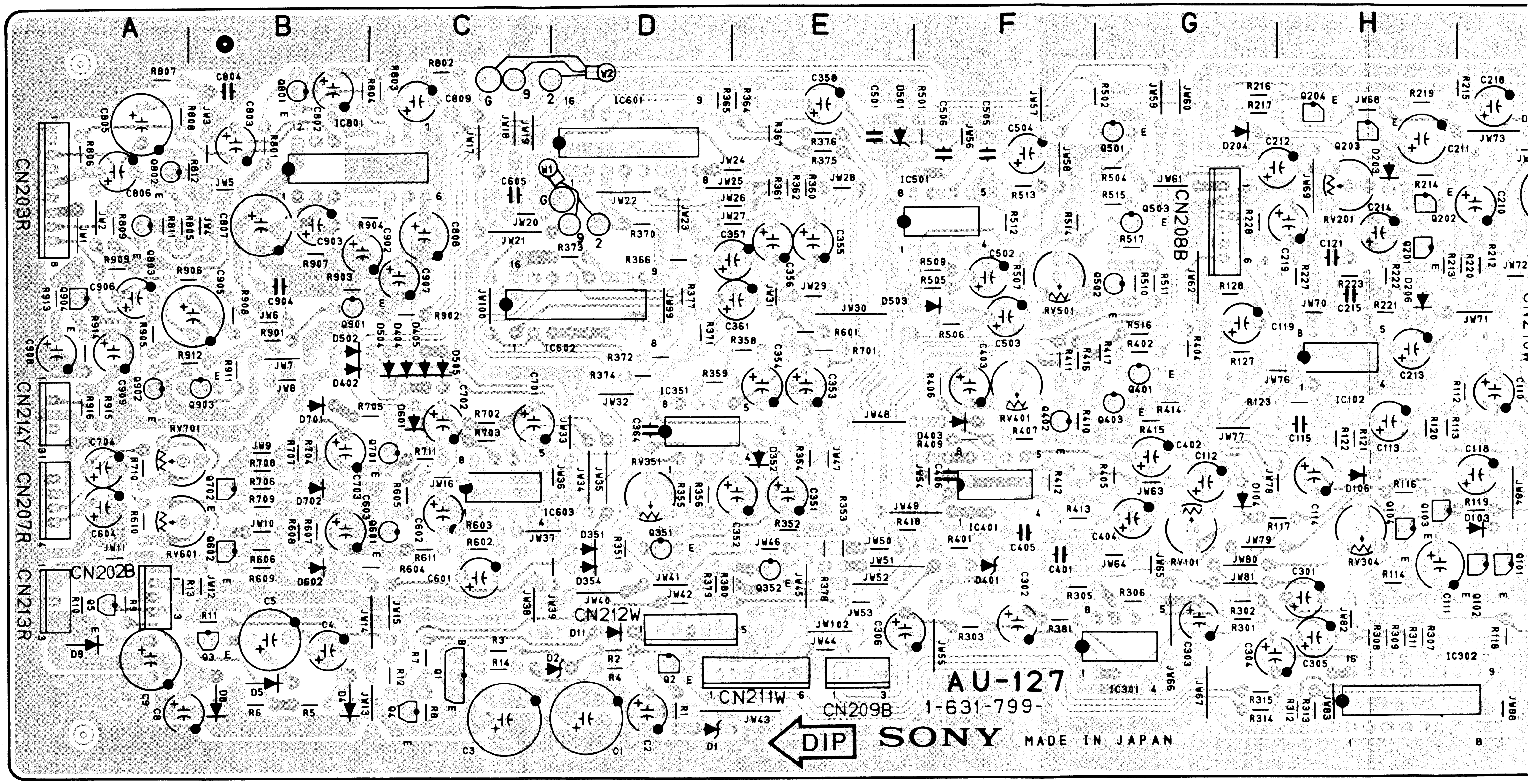
AA-16 COMPONENT SIDE
1-629-555-13(1)
EVO-9800
EVO-9800P

AU-127; AUDIO REC/PB AMPLIFIER

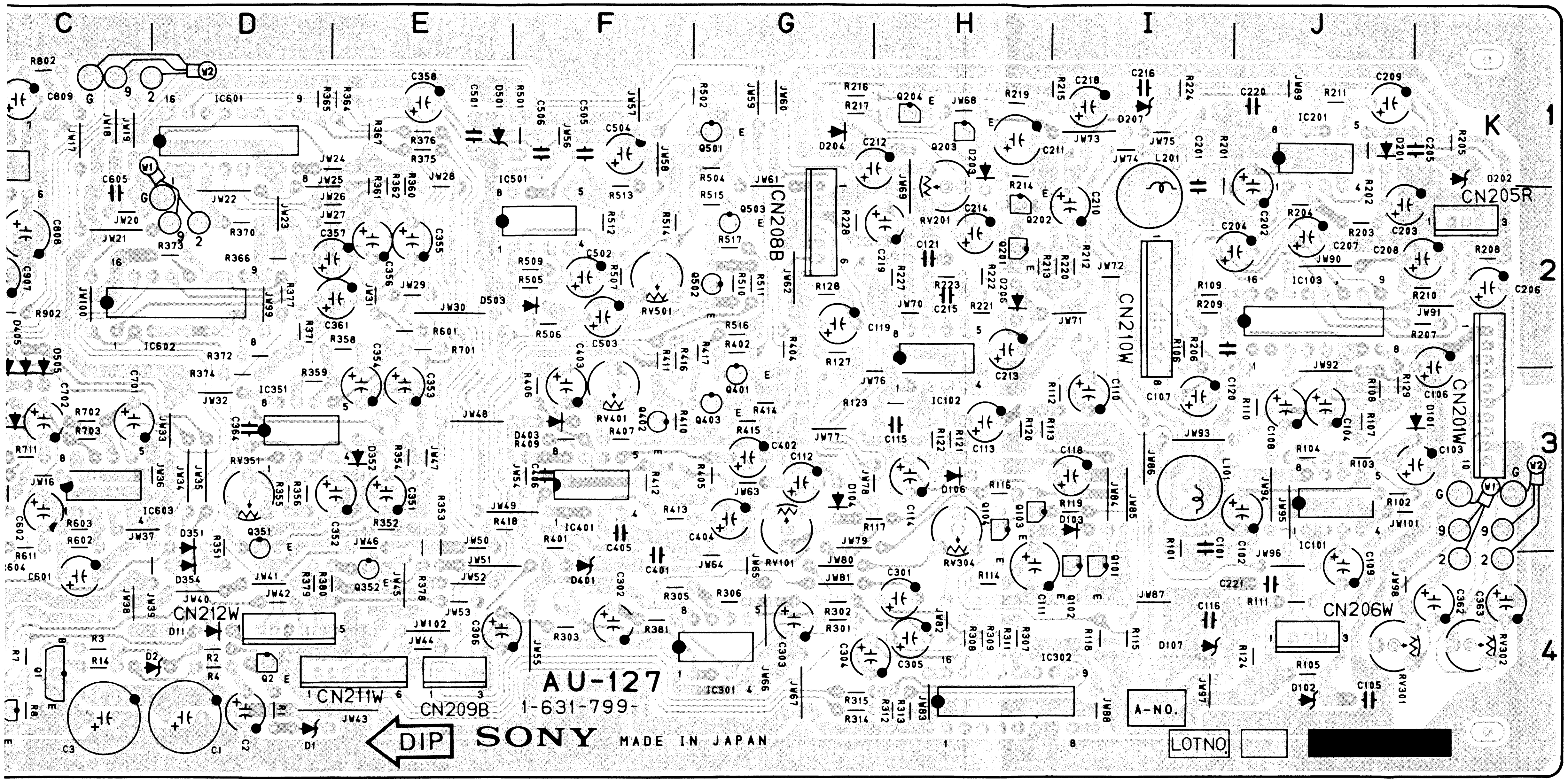
AU-127(1-631-799-12) A SIDE

CN201	K-3
CN202	A-4
CN203	A-1
CN205	K-2
CN206	J-4
CN207	A-3
CN208	G-2
CN209	E-4
CN210	I-2
CN211	E-4
CN212	D-4
CN213	A-4
CN214	A-3
D1	D-4
D2	C-4
D4	B-4
D5	B-4
D8	B-4
D9	A-4
D11	D-4
D101	K-3
D102	J-4
D103	I-3
D104	G-3
D106	H-3
D107	I-4
D201	J-1
D202	K-1
D203	H-1
D204	G-1
D206	H-2
D207	I-1
D351	D-3
D352	E-3
D354	D-4
D401	F-4
D402	B-3
D403	F-3
D404	C-2
D405	C-2
D501	E-1
D502	B-2
D503	E-2
D504	C-2
D505	C-2
D601	C-3
D602	B-4
D701	B-3
D702	B-3
E1	C-1S
E2	E-4S
E3	J-1S
E4	I-4S
IC101	J-3
IC102	H-3
IC103	J-2
IC201	J-1
IC301	G-4
IC302	I-4
IC351	D-3
IC401	F-3
IC501	F-1
IC601	D-1
IC602	D-2
IC603	D-3
IC801	B-1
Q1	C-4
Q2	D-4
Q3	B-4
Q4	C-4
Q5	A-4
Q101	I-4
Q102	I-4
Q103	H-3
Q104	H-3
Q201	H-2
Q202	H-2
Q203	H-1
Q204	H-1
Q351	D-3
Q352	E-4
Q401	G-3
Q402	F-3
Q403	G-3
Q501	G-1
Q502	G-2
Q503	G-2
Q601	C-3
Q602	B-3
Q701	C-3
Q702	B-3
Q801	B-1
Q802	A-1
Q803	A-2
Q901	B-2
Q902	A-3
Q903	B-3
Q904	A-2
RV101	G-4
RV201	H-2
RV301	J-4
RV302	K-4
RV351	D-3
RV401	F-3
RV501	F-2
RV601	A-4
RV701	A-3
TP101	I-2S
TP102	G-3S
TP201	I-1S
TP202	G-2S
TP301	F-4S
TP351	E-3S
TP401	F-3S
TP501	F-2S

S: B SIDE
(SOLDERING SIDE)


A
B
C
D
E
F
G
H
CN203R
CN214Y
CN207R
CN213R
CN202B
CN208B
CN212W
CN211W
CN209B
IC601
IC602
IC603
IC351
IC501
IC401
IC301
IC302
IC102
IC801
AU-127
1-631-799-
DIP
SONY
MADE IN JAPAN

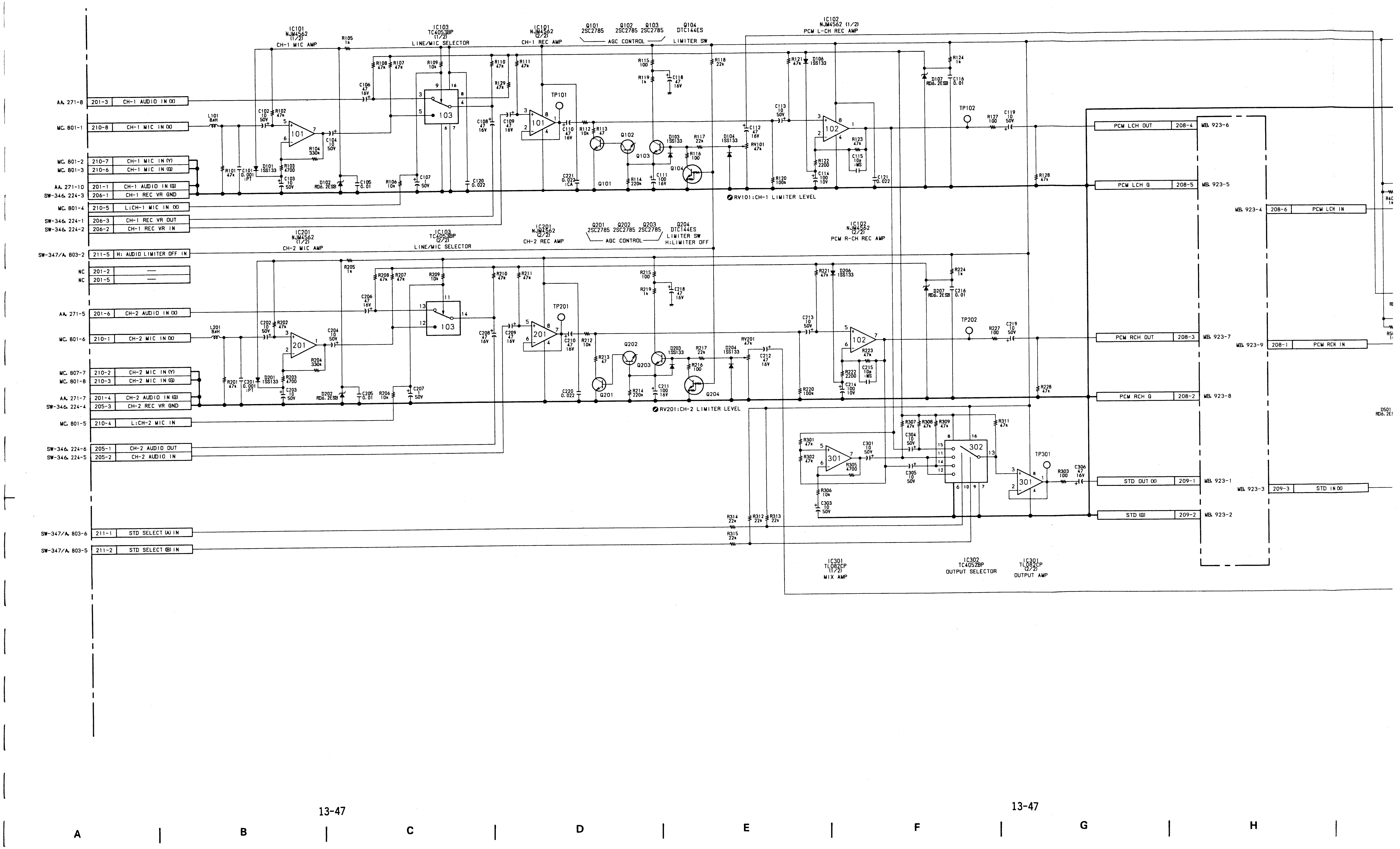
A Sid

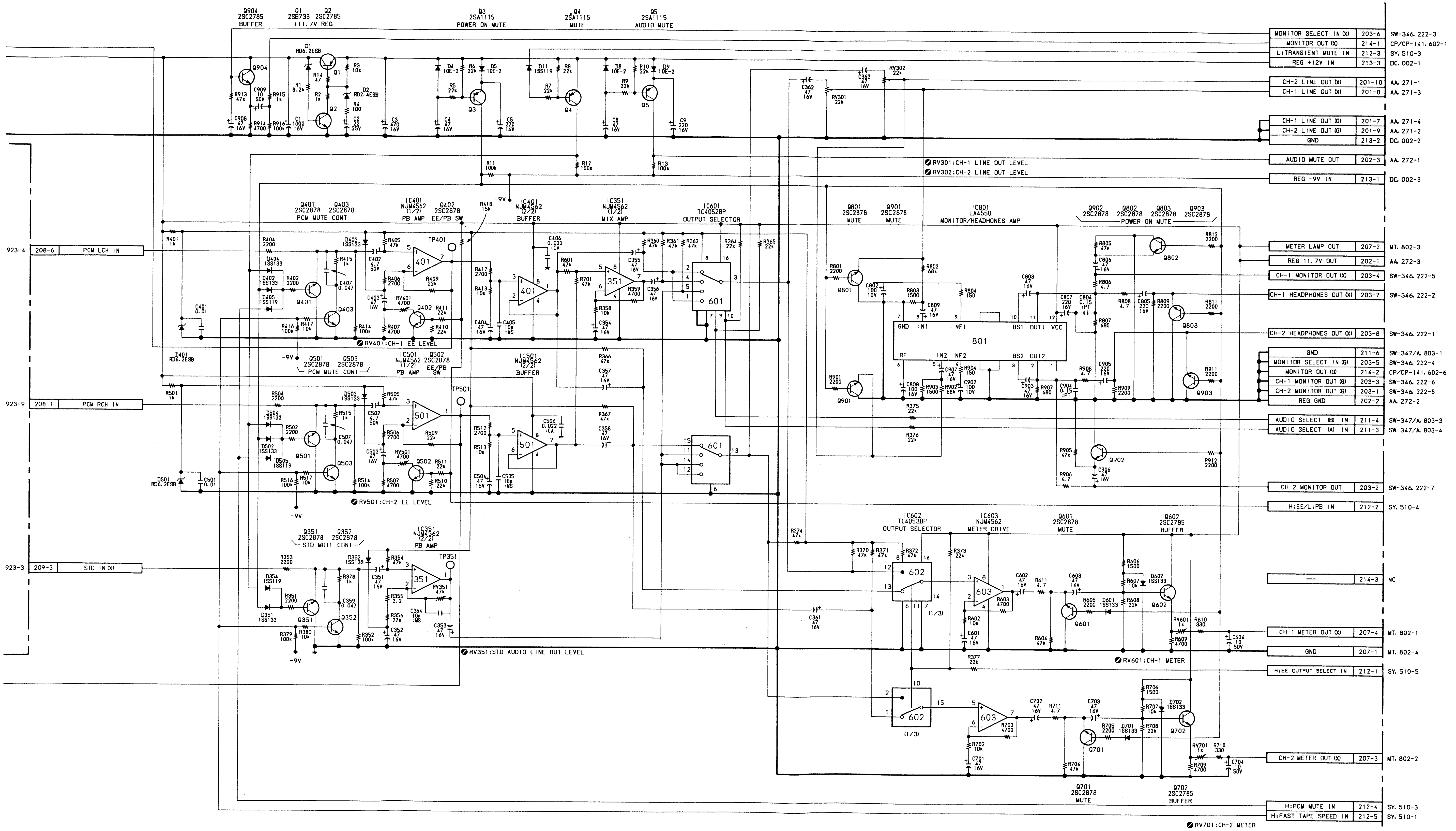

C
D
E
F
G
H
I
J
K
1
2
3
4
IC601
IC602
IC603
IC351
IC501
IC401
IC301
IC302
IC102
IC103
IC101
IC201
CN208B
CN210W
CN205R
CN201W
CN206W
CN212W
CN211W
CN209B
RV351
RV401
RV501
RV101
RV201
RV304
RV301
RV302
L201
L101
AU-127
1-631-799-
DIP
SONY
MADE IN JAPAN
A-NO.
LOTNO.

AU-127 —A SIDE—
1-631-799-12(1)
EVO-9800
EVO-9800P

A Side is the same as COMPONENT Side

AU-127; AUDIO REC/PB AMPLIFIER


IC101 NJM4562 (1/2) CH-1 MIC AMP
IC103 TC4053BP (1/2) LINE/MIC SELECTOR
IC101 NJM4562 (2/2) CH-1 REC AMP
Q101 2SC2785
Q102 2SC2785
Q103 2SC2785
AGC CONTROL
Q104 DTC144ES LIMITER SW
IC102 NJM4562 (1/2) PCM L-CH REC AMP
IC201 NJM4562 (1/2) CH-2 MIC AMP
IC103 TC4053BP (2/2) LINE/MIC SELECTOR
IC201 NJM4562 (2/2) CH-2 REC AMP
Q201 2SC2785
Q202 2SC2785
Q203 2SC2785
Q204 DTC144ES LIMITER SW H:LIMITER OFF
IC102 NJM4562 (2/2) PCM R-CH REC AMP
IC301 TL082CP (1/2) MIX AMP
IC302 TC4052BP OUTPUT SELECTOR
IC301 TL082CP (2/2) OUTPUT AMP
RV101:CH-1 LIMITER LEVEL
RV201:CH-2 LIMITER LEVEL
AA 271-8 201-3 CH-1 AUDIO IN (X)
MC 801-1 210-8 CH-1 MIC IN (X)
MC 801-2 210-7 CH-1 MIC IN (Y)
MC 801-3 210-6 CH-1 MIC IN (G)
AA 271-10 201-1 CH-1 AUDIO IN (G)
SW-346 224-3 206-1 CH-1 REC VR GND
MC 801-4 210-5 L:CH-1 MIC IN (X)
SW-346 224-1 206-3 CH-1 REC VR OUT
SW-346 224-2 206-2 CH-1 REC VR IN
SW-347/A 803-2 211-5 H: AUDIO LIMITER OFF IN
NC 201-2 —
NC 201-5 —
AA 271-5 201-6 CH-2 AUDIO IN (X)
MC 801-6 210-1 CH-2 MIC IN (X)
MC 807-7 210-2 CH-2 MIC IN (Y)
MC 801-8 210-3 CH-2 MIC IN (G)
AA 271-7 201-4 CH-2 AUDIO IN (G)
SW-346 224-4 205-3 CH-2 REC VR GND
MC 801-5 210-4 L:CH-2 MIC IN
SW-346 224-6 205-1 CH-2 AUDIO OUT
SW-346 224-5 205-2 CH-2 AUDIO IN
SW-347/A 803-6 211-1 STD SELECT (A) IN
SW-347/A 803-5 211-2 STD SELECT (B) IN
PCM LCH OUT 208-4 MB 923-6
PCM LCH G 208-5 MB 923-5
MB 923-4 208-6 PCM LCH IN
PCM RCH OUT 208-3 MB 923-7
MB 923-9 208-1 PCM RCH IN
PCM RCH G 208-2 MB 923-8
STD OUT (X) 209-1 MB 923-1
MB 923-3 209-3 STD IN (X)
STD (G) 209-2 MB 923-2
TP101
TP102
TP201
TP202
TP301
L101 8μH
L201 8μH
D101 1SS133
D102 RD6.2ESB
D103 1SS133
D104 1SS133
D106 1SS133
D107 RD6.2ESB
D201 1SS133
D202 RD6.2ESB
D203 1SS133
D204 1SS133
D206 1SS133
D207 RD6.2ESB
RV101 47k
RV201 47k
A
B
C
D
E
F
G
H

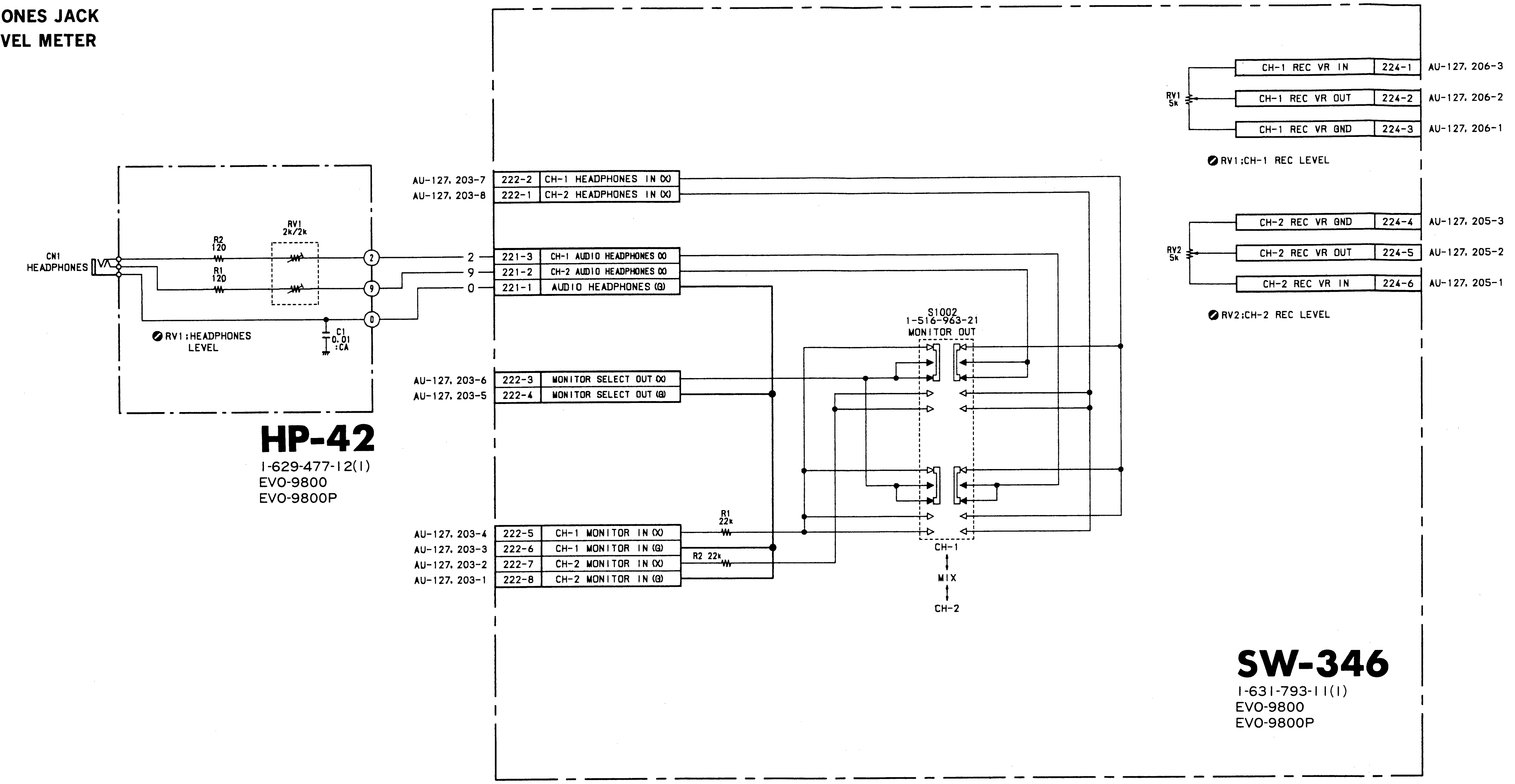

Q904 2SC2785 BUFFER
Q1 2SB733 Q2 2SC2785 +11.7V REG
Q3 2SA1115 POWER ON MUTE
Q4 2SA1115 MUTE
Q5 2SA1115 AUDIO MUTE
Q401 2SC2878 Q403 2SC2878 PCM MUTE CONT
IC401 NJM4562 (1/2) PB AMP
Q402 2SC2878 EE/PB SW
IC401 NJM4562 (2/2) BUFFER
IC351 NJM4562 (1/2) MIX AMP
IC601 TC4052BP OUTPUT SELECTOR
Q501 2SC2878 Q503 2SC2878 PCM MUTE CONT
IC501 NJM4562 (1/2) PB AMP
Q502 2SC2878 EE/PB SW
IC501 NJM4562 (2/2) BUFFER
Q351 2SC2878 Q352 2SC2878 STD MUTE CONT
IC351 NJM4562 (2/2) PB AMP
Q801 2SC2878 MUTE
Q901 2SC2878 MUTE
IC801 LA4550 MONITOR/HEADHONES AMP
Q902 2SC2878 Q802 2SC2878 Q803 2SC2878 Q903 2SC2878 POWER ON MUTE
IC602 TC4053BP OUTPUT SELECTOR
IC603 NJM4562 METER DRIVE
Q601 2SC2878 MUTE
Q602 2SC2785 BUFFER
Q701 2SC2878 MUTE
Q702 2SC2785 BUFFER
RV301:CH-1 LINE OUT LEVEL
RV302:CH-2 LINE OUT LEVEL
RV401:CH-1 EE LEVEL
RV501:CH-2 EE LEVEL
RV351:STD AUDIO LINE OUT LEVEL
RV601:CH-1 METER
RV701:CH-2 METER
TP401
TP501
TP351
923-4 208-6 PCM LCH IN
923-9 208-1 PCM RCH IN
923-3 209-3 STD IN (X)
MONITOR SELECT IN (X) 203-6 SW-346, 222-3
MONITOR OUT (X) 214-1 CP/CP-141, 602-1
L:TRANSIENT MUTE IN 212-3 SY, 510-3
REG +12V IN 213-3 DC, 002-1
CH-2 LINE OUT (X) 201-10 AA, 271-1
CH-1 LINE OUT (X) 201-8 AA, 271-3
CH-1 LINE OUT (G) 201-7 AA, 271-4
CH-2 LINE OUT (G) 201-9 AA, 271-2
GND 213-2 DC, 002-2
AUDIO MUTE OUT 202-3 AA, 272-1
REG -9V IN 213-1 DC, 002-3
METER LAMP OUT 207-2 MT, 802-3
REG 11.7V OUT 202-1 AA, 272-3
CH-1 MONITOR OUT (X) 203-4 SW-346, 222-5
CH-1 HEADPHONES OUT (X) 203-7 SW-346, 222-2
CH-2 HEADPHONES OUT (X) 203-8 SW-346, 222-1
GND 211-6 SW-347/A, 803-1
MONITOR SELECT IN (G) 203-5 SW-346, 222-4
MONITOR OUT (G) 214-2 CP/CP-141, 602-6
CH-1 MONITOR OUT (G) 203-3 SW-346, 222-6
CH-2 MONITOR OUT (G) 203-1 SW-346, 222-8
REG GND 202-2 AA, 272-2
AUDIO SELECT (B) IN 211-4 SW-347/A, 803-3
AUDIO SELECT (A) IN 211-3 SW-347/A, 803-4
CH-2 MONITOR OUT 203-2 SW-346, 222-7
H:EE/L:PB IN 212-2 SY, 510-4
— 214-3 NC
CH-1 METER OUT (X) 207-4 MT, 802-1
GND 207-1 MT, 802-4
H:EE OUTPUT SELECT IN 212-1 SY, 510-5
CH-2 METER OUT (X) 207-3 MT, 802-2
H:PCM MUTE IN 212-4 SY, 510-3
H:FAST TAPE SPEED IN 212-5 SY, 510-1
-9V

AU-127

1-631-799-12(1)
EVO-9800
EVO-9800P

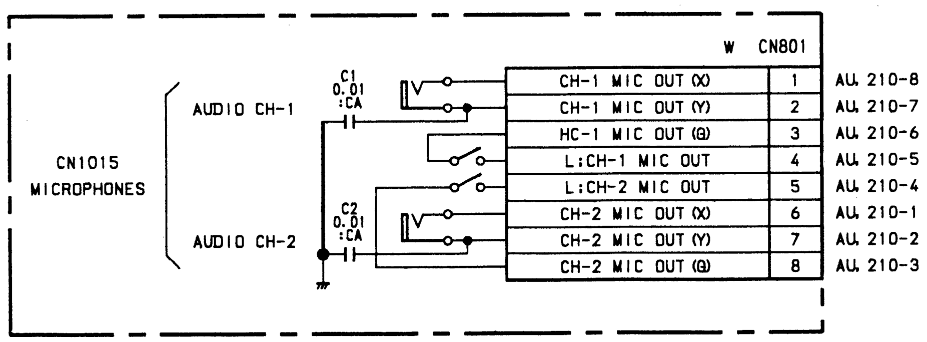
H 42; HEADPHONES LEVEL CONTROL
S 346; AUDIO LEVEL CONTROL
MC-28; MICROPHONES JACK
M 57; AUDIO LEVEL METER

HP-42; HEADPH
SW-346; AUDIO
MC-28; MICROP
MT-57; AUDIO L

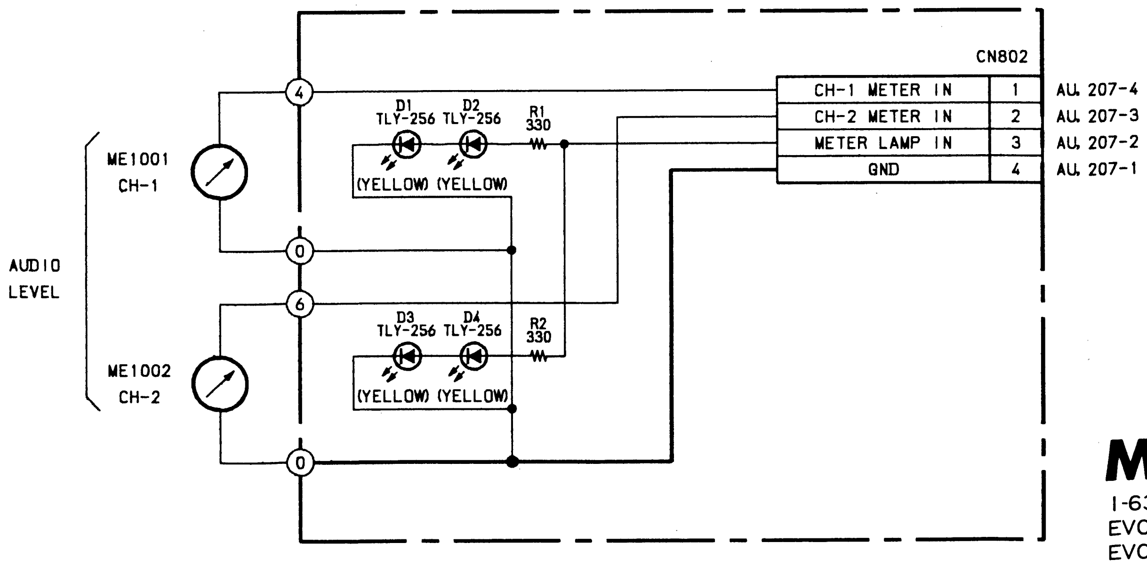

CN1
HEADPHONES
R2
120
R1
120
RV1
2k/2k
C1
0.01
:CA
RV1:HEADPHONES LEVEL
2
9
0
AU-127, 203-7
AU-127, 203-8
222-2
222-1
CH-1 HEADPHONES IN (X)
CH-2 HEADPHONES IN (X)
221-3
221-2
221-1
CH-1 AUDIO HEADPHONES (X)
CH-2 AUDIO HEADPHONES (X)
AUDIO HEADPHONES (G)
AU-127, 203-6
AU-127, 203-5
222-3
222-4
MONITOR SELECT OUT (X)
MONITOR SELECT OUT (G)
AU-127, 203-4
AU-127, 203-3
AU-127, 203-2
AU-127, 203-1
222-5
222-6
222-7
222-8
CH-1 MONITOR IN (X)
CH-1 MONITOR IN (G)
CH-2 MONITOR IN (X)
CH-2 MONITOR IN (G)
R1
22k
R2 22k
S1002
1-516-963-21
MONITOR OUT
CH-1
MIX
CH-2
RV1
5k
CH-1 REC VR IN
CH-1 REC VR OUT
CH-1 REC VR GND
224-1
224-2
224-3
AU-127, 206-3
AU-127, 206-2
AU-127, 206-1
RV1:CH-1 REC LEVEL
RV2
5k
CH-2 REC VR GND
CH-2 REC VR OUT
CH-2 REC VR IN
224-4
224-5
224-6
AU-127, 205-3
AU-127, 205-2
AU-127, 205-1
RV2:CH-2 REC LEVEL

HP-42
1-629-477-12(1)
EVO-9800
EVO-9800P

SW-346
1-631-793-11(1)
EVO-9800
EVO-9800P


W CN801
CN1015
MICROPHONES
AUDIO CH-1
AUDIO CH-2
C1
0.01
:CA
C2
0.01
:CA
CH-1 MIC OUT (X)
CH-1 MIC OUT (Y)
HC-1 MIC OUT (G)
L:CH-1 MIC OUT
L:CH-2 MIC OUT
CH-2 MIC OUT (X)
CH-2 MIC OUT (Y)
CH-2 MIC OUT (G)
1
2
3
4
5
6
7
8
AU, 210-8
AU, 210-7
AU, 210-6
AU, 210-5
AU, 210-4
AU, 210-1
AU, 210-2
AU, 210-3

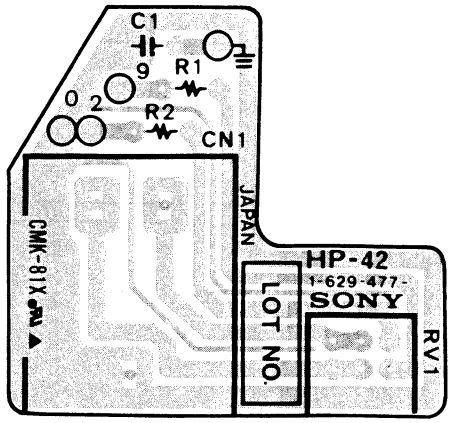
MC-28
1-622-222-11(1)
EVO-9800
EVO-9800P


CN802
AUDIO
LEVEL
ME1001
CH-1
ME1002
CH-2
4
0
6
0
D1
TLY-256
D2
TLY-256
R1
330
(YELLOW) (YELLOW)
D3
TLY-256
D4
TLY-256
R2
330
(YELLOW) (YELLOW)
CH-1 METER IN
CH-2 METER IN
METER LAMP IN
GND
1
2
3
4
AU, 207-4
AU, 207-3
AU, 207-2
AU, 207-1

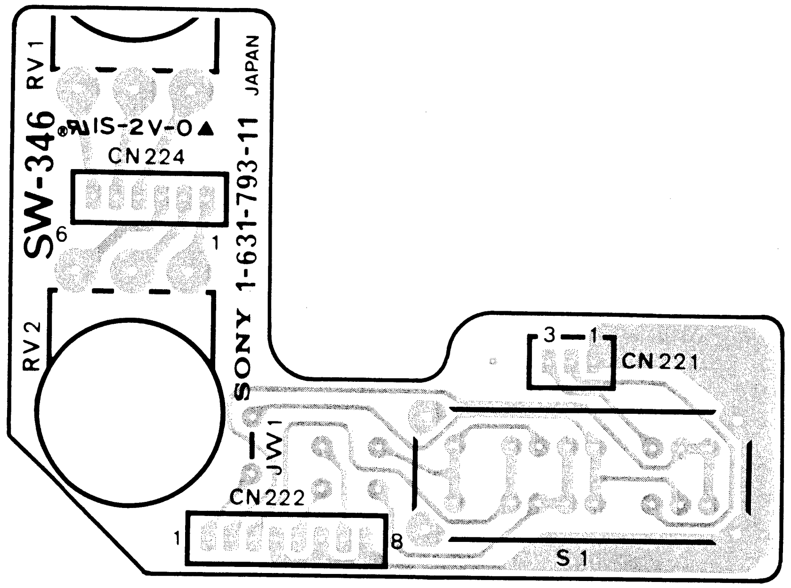
MT-57
1-631-806-11(1)
EVO-9800
EVO-9800P

HP-42, MC-28, MT-57, SW-346

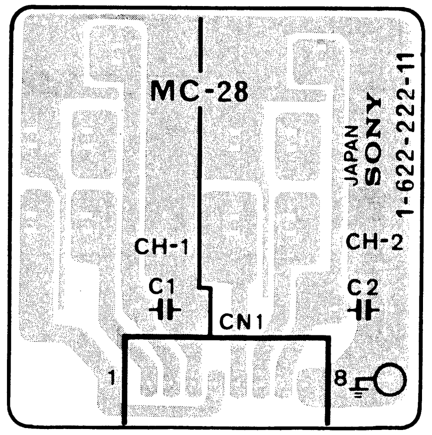
HP-42 ; HEADPHONES LEVEL CONTROL
SW-346 ; AUDIO LEVEL CONTROL
MC-28 ; MICROPHONES JACK
MT-57 ; AUDIO LEVEL METER


C1
R1
R2
9
0
2
CN1
JAPAN
CMK-81X
▲
HP-42
1-629-477-
SONY
LOT NO.
RV1

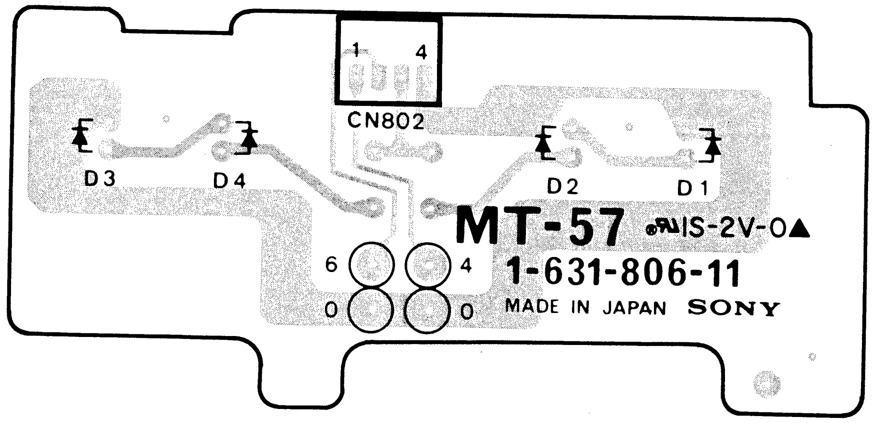
HP-42 —A SIDE—
1-629-477-12(1)
EVO-9800


RV1
SW-346
IS-2V-0▲
CN224
6
1
1-631-793-11
JAPAN
SONY
RV2
JW1
CN222
1
8
3
1
CN221
S1

SW-346 —B SIDE—
1-631-793-11(1)
EVO-9800
EVO-9800P


MC-28
JAPAN
SONY
1-622-222-11
CH-1
CH-2
C1
C2
CN1
1
8

MC-28 —A SIDE—
1-622-222-11(1)
EVO-9800


1
4
CN802
D3
D4
D2
D1
MT-57
IS-2V-0▲
1-631-806-11
MADE IN JAPAN SONY
6
4
0
0

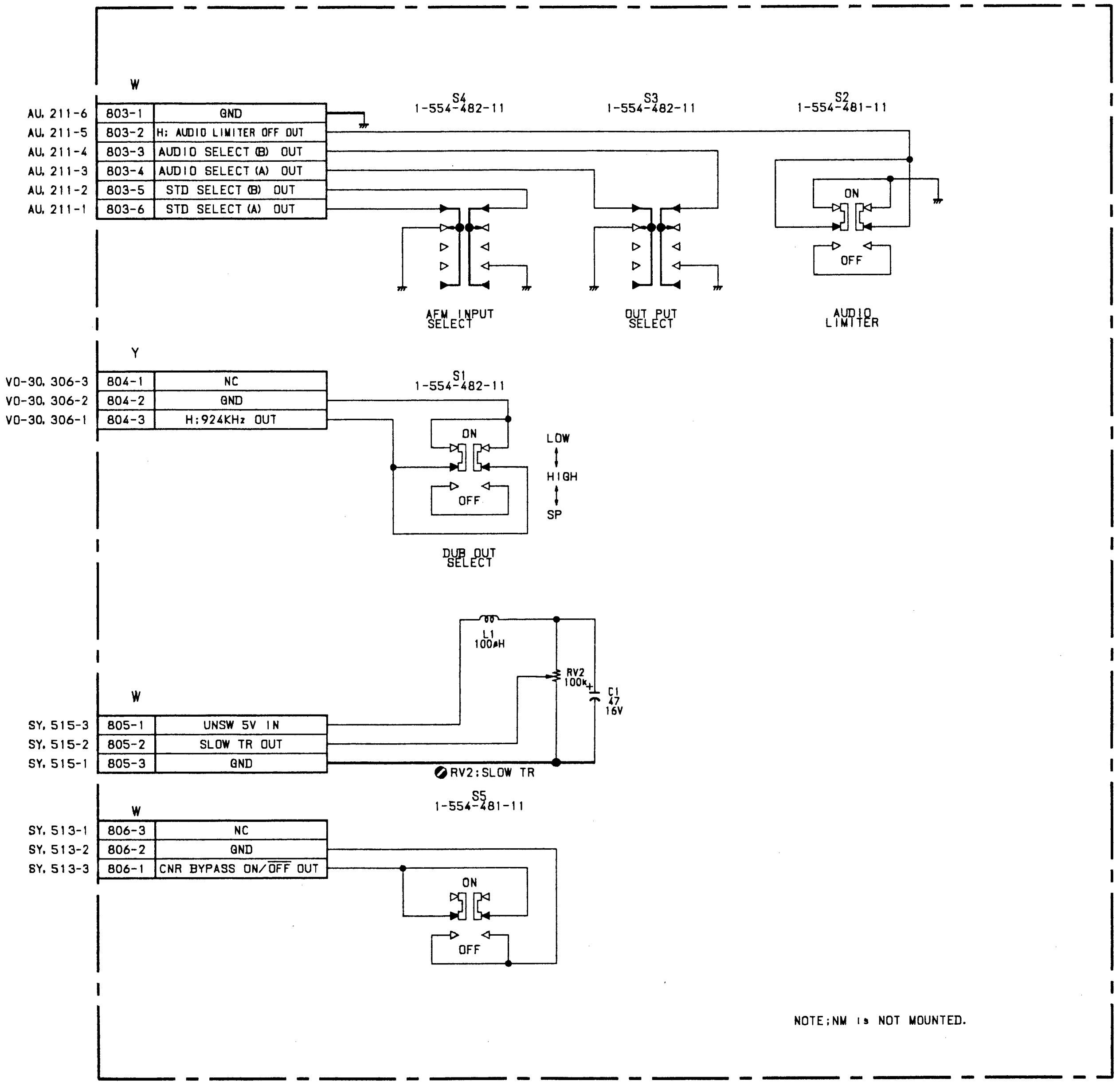
MT-57 —B SIDE—
1-631-806-11(1)
EVO-9800
EVO-9800P

A Side is the same as COMPONENT Side

B Side is the same as SOLDER Side

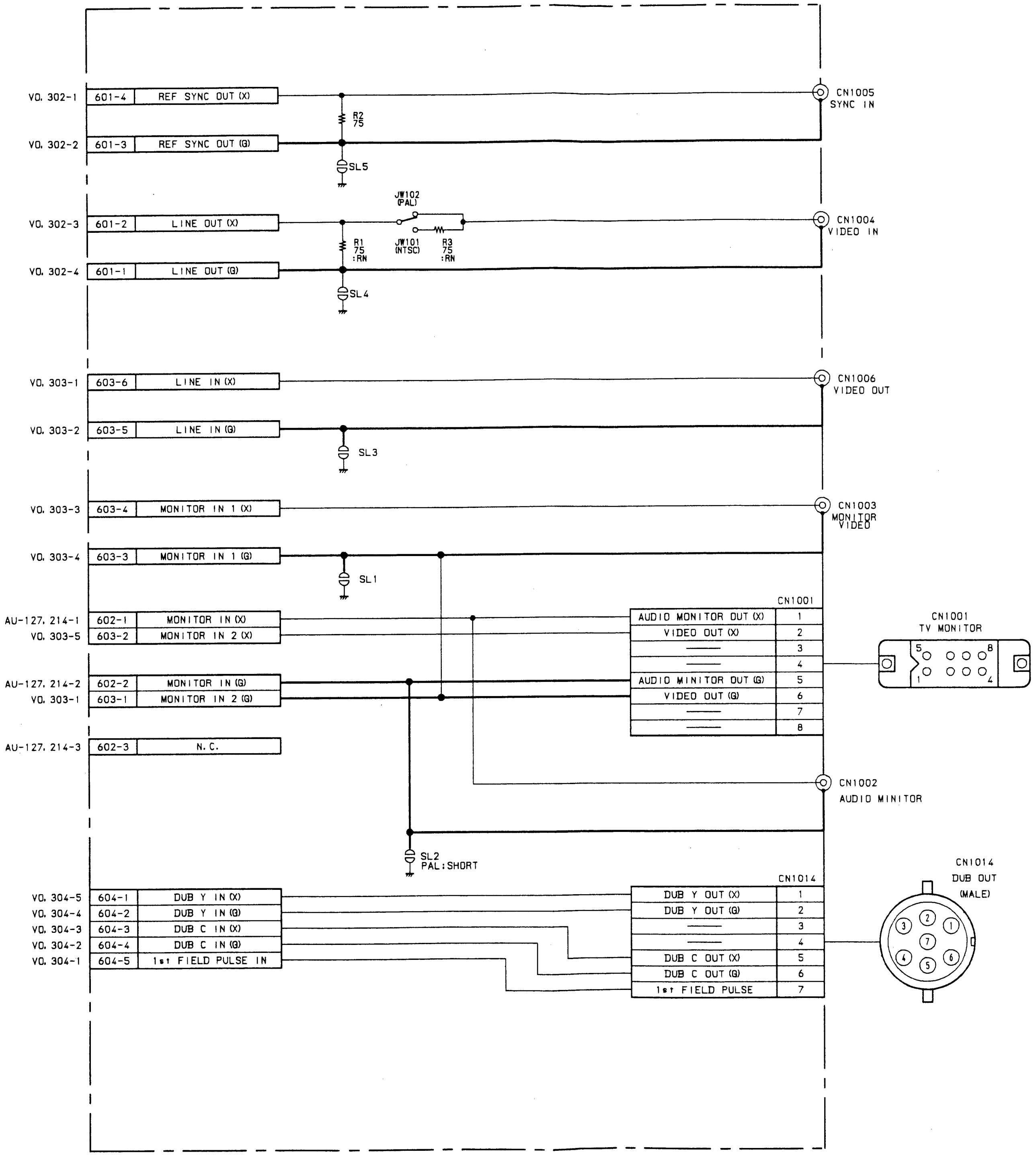
13-48

SW-347A ; AUDIO SELECT SWITCH
CP-141 ; CONNECTOR PANEL


W
AU, 211-6 803-1 GND
AU, 211-5 803-2 H: AUDIO LIMITER OFF OUT
AU, 211-4 803-3 AUDIO SELECT (B) OUT
AU, 211-3 803-4 AUDIO SELECT (A) OUT
AU, 211-2 803-5 STD SELECT (B) OUT
AU, 211-1 803-6 STD SELECT (A) OUT
S4 1-554-482-11
S3 1-554-482-11
S2 1-554-481-11
ON
OFF
AFM INPUT SELECT
OUT PUT SELECT
AUDIO LIMITER
Y
VO-30, 306-3 804-1 NC
VO-30, 306-2 804-2 GND
VO-30, 306-1 804-3 H:924KHz OUT
S1 1-554-482-11
LOW
HIGH
SP
DUB OUT SELECT
L1 100μH
RV2 100k
C1 47 16V
W
SY, 515-3 805-1 UNSW 5V IN
SY, 515-2 805-2 SLOW TR OUT
SY, 515-1 805-3 GND
RV2:SLOW TR
S5 1-554-481-11
W
SY, 513-1 806-3 NC
SY, 513-2 806-2 GND
SY, 513-3 806-1 CNR BYPASS ON/OFF OUT
NOTE:NM is NOT MOUNTED.

SW-347A

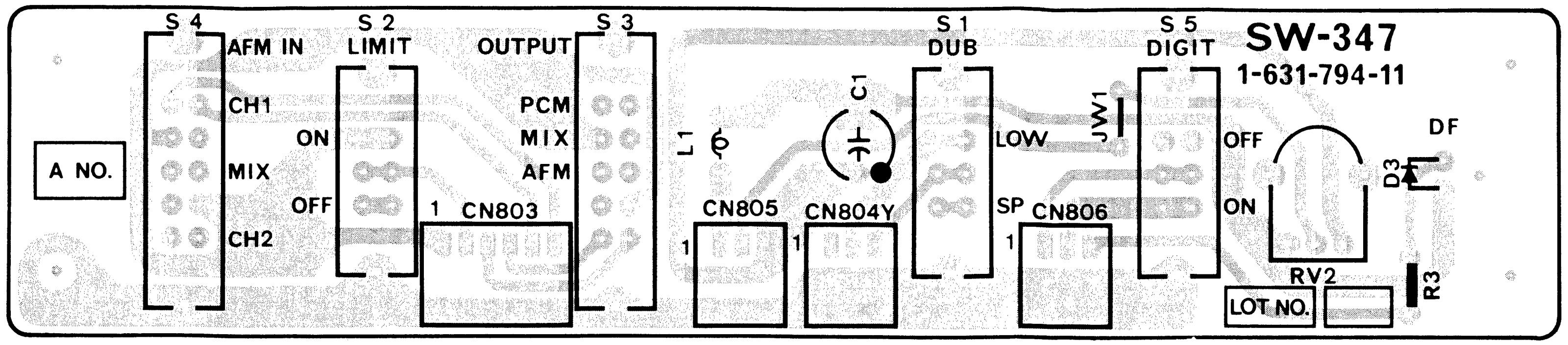
1-631-794-11(1)
EVO-9800P


VO, 302-1 601-4 REF SYNC OUT (X)
VO, 302-2 601-3 REF SYNC OUT (G)
R2 75
SL5
CN1005 SYNC IN
JW102 (PAL)
JW101 (NTSC)
R3 75 :RN
R1 75 :RN
VO, 302-3 601-2 LINE OUT (X)
VO, 302-4 601-1 LINE OUT (G)
SL4
CN1004 VIDEO IN
VO, 303-1 603-6 LINE IN (X)
VO, 303-2 603-5 LINE IN (G)
SL3
CN1006 VIDEO OUT
VO, 303-3 603-4 MONITOR IN 1 (X)
VO, 303-4 603-3 MONITOR IN 1 (G)
SL1
CN1003 MONITOR VIDEO
AU-127, 214-1 602-1 MONITOR IN (X)
VO, 303-5 603-2 MONITOR IN 2 (X)
AU-127, 214-2 602-2 MONITOR IN (G)
VO, 303-1 603-1 MONITOR IN 2 (G)
AU-127, 214-3 602-3 N.C.
CN1001
AUDIO MONITOR OUT (X) 1
VIDEO OUT (X) 2
3
4
AUDIO MINITOR OUT (G) 5
VIDEO OUT (G) 6
7
8
CN1001 TV MONITOR
CN1002 AUDIO MINITOR
SL2 PAL:SHORT
CN1014
VO, 304-5 604-1 DUB Y IN (X)
VO, 304-4 604-2 DUB Y IN (G)
VO, 304-3 604-3 DUB C IN (X)
VO, 304-2 604-4 DUB C IN (G)
VO, 304-1 604-5 1st FIELD PULSE IN
DUB Y OUT (X) 1
DUB Y OUT (G) 2
3
4
DUB C OUT (X) 5
DUB C OUT (G) 6
1st FIELD PULSE 7
CN1014 DUB OUT (MALE)

CP-141

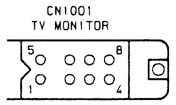
1-631-807-12(1)
EVO-9800
EVO-9800P

SW-347A ; AUDIO SELECT SWITCH
CP-141 ; CONNECTOR PANEL

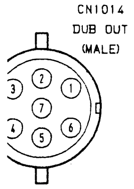

S 4
AFM IN
CH1
MIX
CH2
A NO.
S 2
LIMIT
ON
OFF
OUTPUT
PCM
MIX
AFM
S 3
1 CN803
L1
C1
CN805
1
CN804Y
1
S 1
DUB
LOW
SP
CN806
1
JW1
S 5
DIGIT
OFF
ON
SW-347
1-631-794-11
DF
D3
RV2
R3
LOT NO.

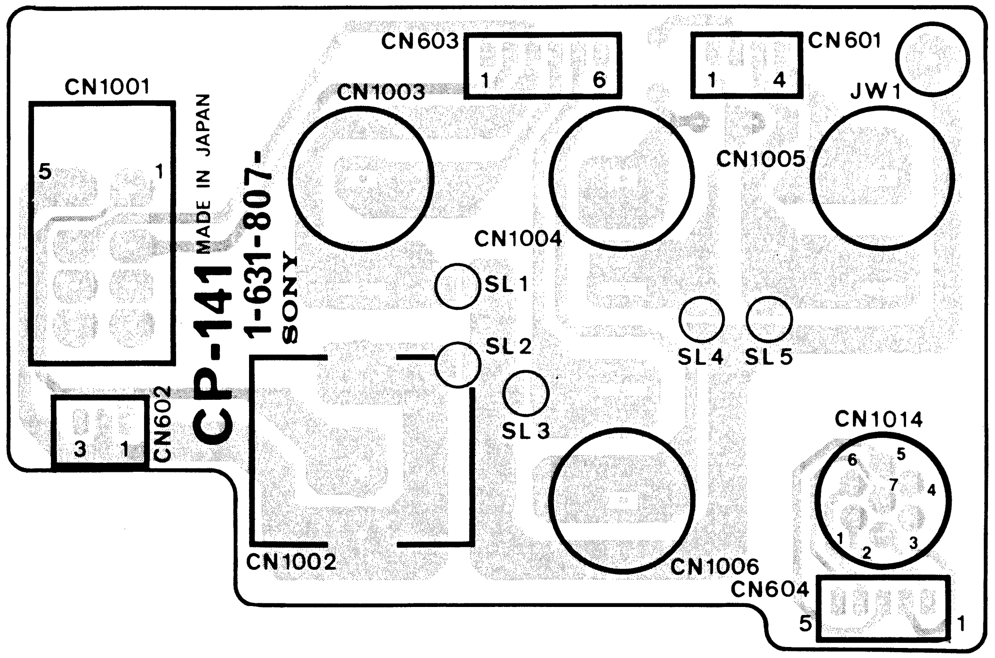
SW-347/A —A SIDE—
1-631-794-11(1)
EVO-9800
EVO-9800P

A Side is the same as COMPONENT Side


CN1001
TV MONITOR
5
8
1
4

ITOR

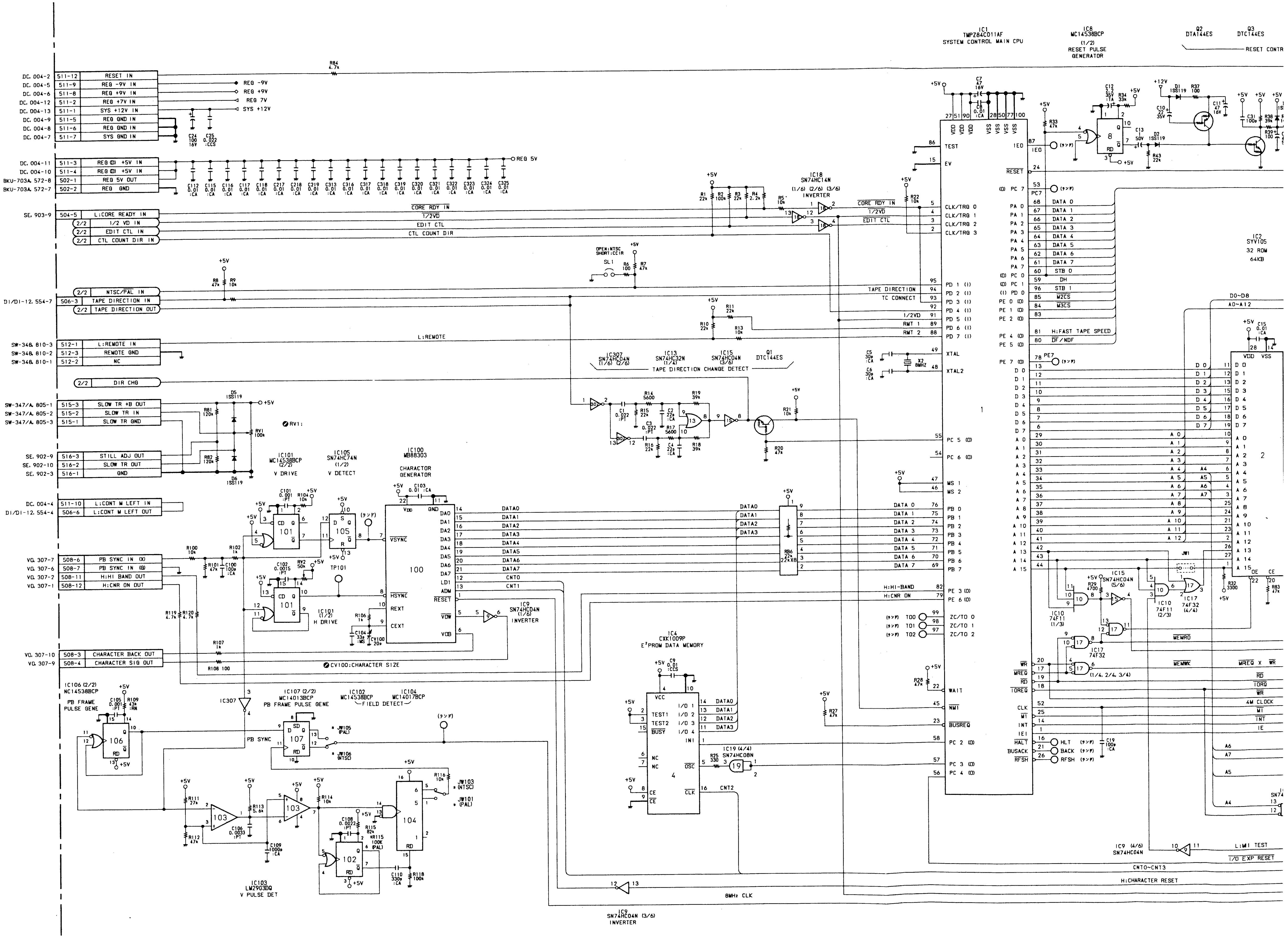

CN1014
DUB OUT
(MALE)
1
2
3
4
5
6
7


CN1001
5
1
CP-141 MADE IN JAPAN
1-631-807-
SONY
CN603
1
6
CN601
1
4
JW1
CN1003
CN1005
CN1004
SL1
SL2
SL3
SL4
SL5
CN602
3
1
CN1002
CN1006
CN1014
1
2
3
4
5
6
7
CN604
5
1

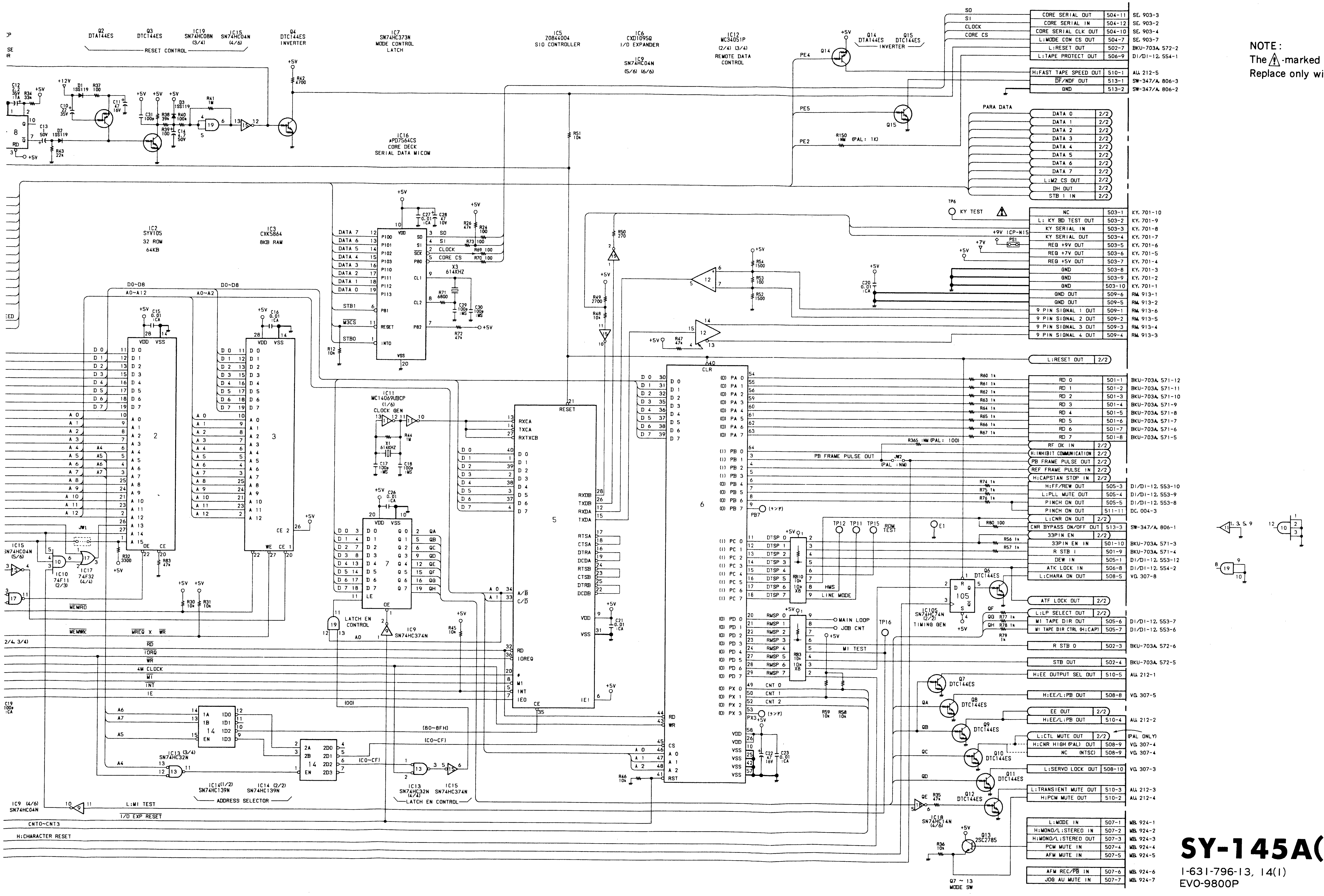
CP-141 —B SIDE—
1-631-807-12(1)
EVO-9800
EVO-9800P

B Side is the same as SOLDER Side

S ·145A (1/2); SYSTEM CONTROL


IC1 TMPZ84C011AF SYSTEM CONTROL MAIN CPU
IC8 MC14538BCP (1/2) RESET PULSE GENERATOR
Q2 DTA144ES
Q3 DTC144ES
RESET CONTR
IC2 SYV105 32 ROM 64KB
IC18 SN74HC14N (1/6) (2/6) (3/6) INVERTER
IC307 SN74HC04N (1/6) (2/6)
IC13 SN74HC32N (1/4)
IC15 SN74HC04N (3/6)
Q1 DTC144ES
TAPE DIRECTION CHANGE DETECT
IC101 MC14538BCP (2/2) V DRIVE
IC105 SN74HC74N (1/2) V DETECT
IC100 MB88303 CHARACTOR GENERATOR
IC9 SN74HC04N (1/6) INVERTER
IC4 CXK1009P E²PROM DATA MEMORY
IC106 (2/2) MC14538BCP PB FRAME PULSE GENE
IC107 (2/2) MC14013BCP PB FRAME PULSE GENE
IC102 MC14538BCP
IC104 MC14017BCP
FIELD DETECT
IC103 LM2903DQ V PULSE DET
IC9 SN74HC04N (3/6) INVERTER
IC9 (4/6) SN74HC04N
IC10 74F11
IC17 74F32
IC15 SN74HC04N (5/6)
RESET IN
REG -9V IN
REG +9V IN
REG +7V IN
SYS +12V IN
REG GND IN
SYS GND IN
REG 5V
L:CORE READY IN
1/2 VD IN
EDIT CTL IN
CTL COUNT DIR IN
NTSC/PAL IN
TAPE DIRECTION IN
TAPE DIRECTION OUT
L:REMOTE IN
REMOTE GND
NC
DIR CHG
SLOW TR +B OUT
SLOW TR IN
SLOW TR GND
STILL ADJ OUT
SLOW TR OUT
GND
L:CONT M LEFT IN
L:CONT M LEFT OUT
PB SYNC IN (X)
PB SYNC IN (Y)
H:HI BAND OUT
H:CNR ON OUT
CHARACTER BACK OUT
CHARACTER SIG OUT
CV100:CHARACTER SIZE
RV1
8MHz CLK
H:CHARACTER RESET
CNT0~CNT3
L:M1 TEST
I/O EXP RESET
D0~D8
A0~A12

13-50

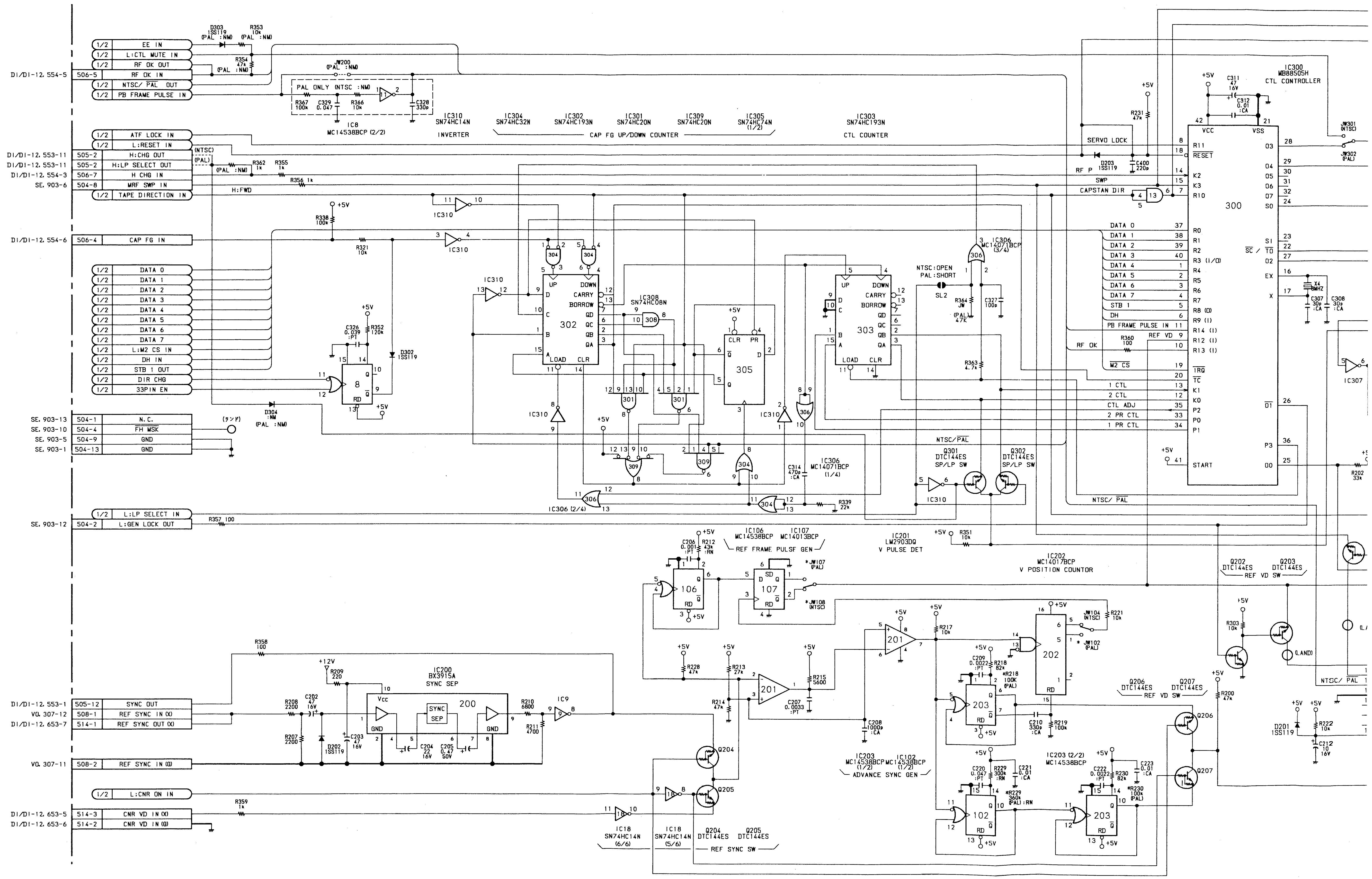

Q2 DTA144ES
Q3 DTC144ES
IC19 SN74HC08N (3/4)
IC15 SN74HC04N (4/6)
RESET CONTROL
Q4 DTC144ES INVERTER
IC7 SN74HC373N MODE CONTROL LATCH
IC5 Z0844004 SIO CONTROLLER
IC6 CXD1095Q I/O EXPANDER
IC12 MC34051P (2/4) (3/4) REMOTE DATA CONTROL
IC9 SN74HC04N (5/6) (6/6)
Q14 DTA144ES
Q15 DTC144ES
INVERTER
IC16 μPD7564CS CORE DECK SERIAL DATA MICOM
IC2 SYV105 32 ROM 64KB
IC3 CXK5864 8KB RAM
IC11 MC14069UBCP (1/6) CLOCK GEN
X1 614KHZ
X3 614KHZ
LATCH EN CONTROL
IC9 SN74HC374N
IC13 SN74HC32N
IC14 (1/2) SN74HC139N
IC14 (2/2) SN74HC139N
ADDRESS SELECTOR
IC13 SN74HC32N (4/4)
IC15 SN74HC374N
LATCH EN CONTROL
IC10 74F11 (2/3)
IC17 74F32 (4/4)
IC15 SN74HC04N (5/6)
IC9 (4/6) SN74HC04N
IC105 SN74HC74N (2/2) TIMING GEN
IC18 SN74HC14N (4/6)
Q6 DTC144ES
Q7 DTC144ES
Q8 DTC144ES
Q9 DTC144ES
Q10 DTC144ES
Q11 DTC144ES
Q12 DTC144ES
Q13 2SC2785
Q7 ~ 13 MODE SW
PARA DATA
PB FRAME PULSE OUT
MI TEST
HMS
LINE MODE
MAIN LOOP
JOB CNT
TP6 KY TEST
TP12 TP11 TP15 ROM TEST
TP16
E1
L:MI TEST
I/O EXP RESET
CNT0~CNT3
H:CHARACTER RESET
MEMRD
MEMWR
MREQ X WR
RD
IORQ
WR
4M CLOCK
M1
INT
IE
(80~8FH)
(C0~CF)
(C0~CF)
(00)
SO
SI
CLOCK
CORE CS
CORE SERIAL OUT 504-11 SE 903-3
CORE SERIAL IN 504-12 SE 903-2
CORE SERIAL CLK OUT 504-10 SE 903-4
L:MODE CON CS OUT 504-7 SE 903-7
L:RESET OUT 502-7 BKU-703A 572-2
L:TAPE PROTECT OUT 506-9 DI/DI-12 554-1
H:FAST TAPE SPEED OUT 510-1 AU 212-5
DF/NDF OUT 513-1 SW-347/A 806-3
GND 513-2 SW-347/A 806-2
DATA 0 2/2
DATA 1 2/2
DATA 2 2/2
DATA 3 2/2
DATA 4 2/2
DATA 5 2/2
DATA 6 2/2
DATA 7 2/2
L:M2 CS OUT 2/2
DH OUT 2/2
STB 1 IN 2/2
NC 503-1 KY 701-10
L:KY BD TEST OUT 503-2 KY 701-9
KEY SERIAL IN 503-3 KY 701-8
KEY SERIAL OUT 503-4 KY 701-7
REG +9V OUT 503-5 KY 701-6
REG +7V OUT 503-6 KY 701-5
REG +5V OUT 503-7 KY 701-4
GND 503-8 KY 701-3
GND 503-9 KY 701-2
GND 503-10 KY 701-1
GND OUT 509-6 RM 913-1
GND OUT 509-5 RM 913-2
9 PIN SIGNAL 1 OUT 509-1 RM 913-6
9 PIN SIGNAL 2 OUT 509-2 RM 913-5
9 PIN SIGNAL 3 OUT 509-3 RM 913-4
9 PIN SIGNAL 4 OUT 509-4 RM 913-3
L:RESET OUT 2/2
RD 0 501-1 BKU-703A 571-12
RD 1 501-2 BKU-703A 571-11
RD 2 501-3 BKU-703A 571-10
RD 3 501-4 BKU-703A 571-9
RD 4 501-5 BKU-703A 571-8
RD 5 501-6 BKU-703A 571-7
RD 6 501-7 BKU-703A 571-6
RD 7 501-8 BKU-703A 571-5
RF OK IN 2/2
H:INHIBIT COMMUNICATION 2/2
PB FRAME PULSE OUT 2/2
REF FRAME PULSE IN 2/2
H:CAPSTAN STOP IN 2/2
H:FF/REW OUT 505-3 DI/DI-12 553-10
L:PLL MUTE OUT 505-4 DI/DI-12 553-9
PINCH ON OUT 505-5 DI/DI-12 553-8
PINCH ON OUT 511-11 DC 004-3
L:CNR ON OUT 2/2
CNR BYPASS ON/OFF OUT 513-3 SW-347/A 806-1
33PIN EN 2/2
33PIN EN IN 501-10 BKU-703A 571-3
R STB I 501-9 BKU-703A 571-4
DEW IN 505-1 DI/DI-12 553-12
ATK LOCK IN 506-8 DI/DI-12 554-2
L:CHARA ON OUT 508-5 VG 307-8
ATF LOCK OUT 2/2
L:LP SELECT OUT 2/2
MI TAPE DIR OUT 505-6 DI/DI-12 553-7
MI TAPE DIR CTRL (H:CAP) 505-7 DI/DI-12 553-6
R STB 0 502-3 BKU-703A 572-6
STB OUT 502-4 BKU-703A 572-5
H:EE OUTPUT SEL OUT 510-5 AU 212-1
H:EE/L:PB OUT 508-8 VG 307-5
EE OUT 2/2
H:EE/L:PB OUT 510-4 AU 212-2
L:CTL MUTE OUT 2/2 (PAL ONLY)
H:CNR HIGH (PAL) OUT 508-9 VG 307-4
NC (NTSC) 508-9 VG 307-4
L:SERVO LOCK OUT 508-10 VG 307-3
L:TRANSIENT MUTE OUT 510-3 AU 212-3
H:PCM MUTE OUT 510-2 AU 212-4
L:MODE IN 507-1 MB 924-1
H:MONO/L:STEREO IN 507-2 MB 924-2
H:MONO/L:STEREO OUT 507-3 MB 924-3
PCM MUTE IN 507-4 MB 924-4
AFM MUTE IN 507-5 MB 924-5
AFM REC/PB IN 507-6 MB 924-6
JOG AU MUTE IN 507-7 MB 924-7

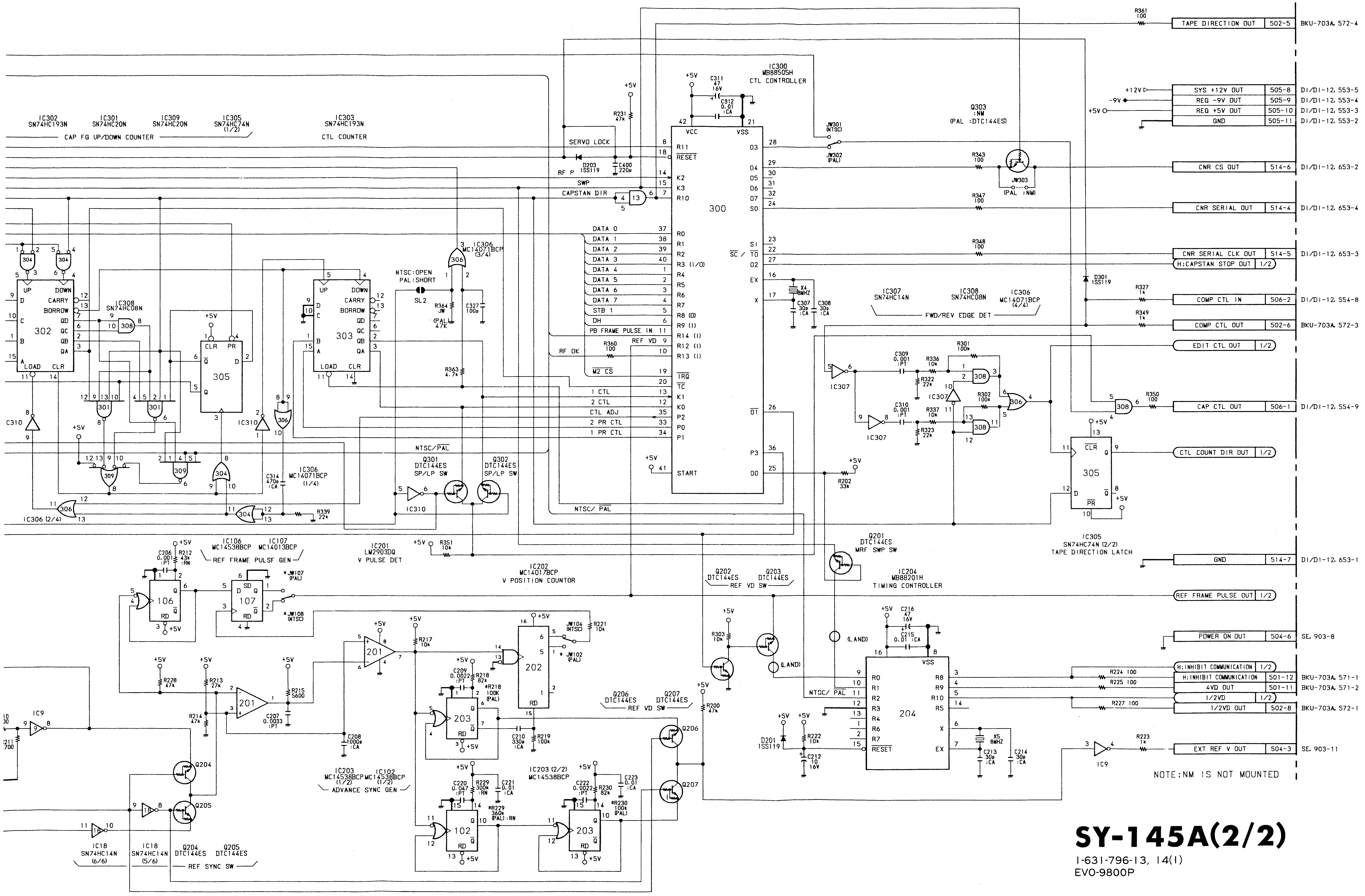
NOTE:
The ⚠-marked components are critical to sefety.
Replace only with same components as specified.

SY-145A(1/2)

1-631-796-13, 14(1)
EVO-9800P

Y-145A (2/2); CTL CONTROL


1/2 EE IN
1/2 L:CTL MUTE IN
1/2 RF OK OUT
506-5 RF OK IN
1/2 NTSC/PAL OUT
1/2 PB FRAME PULSE IN
1/2 ATF LOCK IN
1/2 L:RESET IN
505-2 H:CHG OUT
505-2 H:LP SELECT OUT
506-7 H CHG IN
504-8 MRF SWP IN
1/2 TAPE DIRECTION IN
506-4 CAP FG IN
1/2 DATA 0
1/2 DATA 1
1/2 DATA 2
1/2 DATA 3
1/2 DATA 4
1/2 DATA 5
1/2 DATA 6
1/2 DATA 7
1/2 L:M2 CS IN
1/2 DH IN
1/2 STB 1 OUT
1/2 DIR CHG
1/2 33PIN EN
504-1 N.C.
504-4 FH MSK
504-9 GND
504-13 GND
1/2 L:LP SELECT IN
504-2 L:GEN LOCK OUT
505-12 SYNC OUT
508-1 REF SYNC IN (X)
514-1 REF SYNC OUT (X)
508-2 REF SYNC IN (G)
1/2 L:CNR ON IN
514-3 CNR VD IN (X)
514-2 CNR VD IN (G)
DI/DI-12, 554-5
DI/DI-12, 553-11
DI/DI-12, 553-11
DI/DI-12, 554-3
SE, 903-6
DI/DI-12, 554-6
SE, 903-13
SE, 903-10
SE, 903-5
SE, 903-1
SE, 903-12
DI/DI-12, 553-1
VG, 307-12
DI/DI-12, 653-7
VG, 307-11
DI/DI-12, 653-5
DI/DI-12, 653-6
PAL ONLY (NTSC :NM)
IC8 MC14538BCP (2/2)
IC310 SN74HC14N INVERTER
IC304 SN74HC32N
IC302 SN74HC193N
IC301 SN74HC20N
IC309 SN74HC20N
IC305 SN74HC74N (1/2)
CAP FG UP/DOWN COUNTER
IC303 SN74HC193N CTL COUNTER
IC300 MB88505H CTL CONTROLLER
SERVO LOCK
RF P
SWP
CAPSTAN DIR
DATA 0
DATA 1
DATA 2
DATA 3
DATA 4
DATA 5
DATA 6
DATA 7
STB 1
DH
PB FRAME PULSE IN
REF VD
RF OK
M2 CS
1 CTL
2 CTL
CTL ADJ
2 PR CTL
1 PR CTL
START
RESET
IC306 MC14071BCP (3/4)
NTSC:OPEN PAL:SHORT
SL2
IC308 SN74HC08N
IC306 MC14071BCP (1/4)
IC306 (2/4)
Q301 DTC144ES SP/LP SW
Q302 DTC144ES SP/LP SW
NTSC/PAL
IC106 MC14538BCP
IC107 MC14013BCP
REF FRAME PULSE GEN
IC201 LM2903DQ V PULSE DET
IC202 MC14017BCP V POSITION COUNTOR
Q202 DTC144ES
Q203 DTC144ES
REF VD SW
IC200 BX3915A SYNC SEP
SYNC SEP
IC9
IC203 MC14538BCP (1/2)
IC102 MC14538BCP (1/2)
ADVANCE SYNC GEN
IC203 (2/2) MC14538BCP
Q206 DTC144ES
Q207 DTC144ES
REF VD SW
IC18 SN74HC14N (6/6)
IC18 SN74HC14N (5/6)
Q204 DTC144ES
Q205 DTC144ES
REF SYNC SW
D201 1SS119
IC307
A
B
C
D
E
F
G
H


IC302 SN74HC193N
IC301 SN74HC20N
IC309 SN74HC20N
IC305 SN74HC74N (1/2)
IC303 SN74HC193N
CAP FG UP/DOWN COUNTER
CTL COUNTER
IC300 MB88505H CTL CONTROLLER
IC308 SN74HC08N
IC306 MC14071BCP (3/4)
IC306 MC14071BCP (1/4)
IC306 (2/4)
NTSC:OPEN PAL:SHORT
SL2
SERVO LOCK
RF P
SWP
CAPSTAN DIR
RF OK
DATA 0
DATA 1
DATA 2
DATA 3
DATA 4
DATA 5
DATA 6
DATA 7
STB 1
DH
PB FRAME PULSE IN
REF VD
M2 CS
1 CTL
2 CTL
CTL ADJ
2 PR CTL
1 PR CTL
NTSC/PAL
Q301 DTC144ES SP/LP SW
Q302 DTC144ES SP/LP SW
IC310
Q303 :NM (PAL :DTC144ES)
JW301 (NTSC)
JW302 (PAL)
JW303 (PAL :NM)
X4 8MHZ
IC307 SN74HC14N
IC308 SN74HC08N
IC306 MC14071BCP (4/4)
FWD/REV EDGE DET
IC305 SN74HC74N (2/2) TAPE DIRECTION LATCH
D301 1SS119
D203 1SS119
IC106 MC14538BCP
IC107 MC14013BCP
REF FRAME PULSE GEN
IC201 LM2903DQ V PULSE DET
IC202 MC14017BCP V POSITION COUNTOR
Q201 DTC144ES MRF SWP SW
Q202 DTC144ES
Q203 DTC144ES
REF VD SW
IC204 MB88201H TIMING CONTROLLER
(LAND)
X5 8MHZ
D201 1SS119
IC203 MC14538BCP (1/2)
IC102 MC14538BCP (1/2)
ADVANCE SYNC GEN
IC203 (2/2) MC14538BCP
Q206 DTC144ES
Q207 DTC144ES
REF VD SW
IC18 SN74HC14N (6/6)
IC18 SN74HC14N (5/6)
Q204 DTC144ES
Q205 DTC144ES
REF SYNC SW
IC9
TAPE DIRECTION OUT 502-5 BKU-703A 572-4
SYS +12V OUT 505-8 DI/DI-12 553-5
REG -9V OUT 505-9 DI/DI-12 553-4
REG +5V OUT 505-10 DI/DI-12 553-3
GND 505-11 DI/DI-12 553-2
CNR CS OUT 514-6 DI/DI-12 653-2
CNR SERIAL OUT 514-4 DI/DI-12 653-4
CNR SERIAL CLK OUT 514-5 DI/DI-12 653-3
H:CAPSTAN STOP OUT 1/2
COMP CTL IN 506-2 DI/DI-12 554-8
COMP CTL OUT 502-6 BKU-703A 572-3
EDIT CTL OUT 1/2
CAP CTL OUT 506-1 DI/DI-12 554-9
CTL COUNT DIR OUT 1/2
GND 514-7 DI/DI-12 653-1
REF FRAME PULSE OUT 1/2
POWER ON OUT 504-6 SE 903-8
H:INHIBIT COMMUNICATION 1/2
H:INHIBIT COMMUNICATION 501-12 BKU-703A 571-1
4VD OUT 501-11 BKU-703A 571-2
1/2VD 1/2
1/2VD OUT 502-8 BKU-703A 572-1
EXT REF V OUT 504-3 SE 903-11
NOTE:NM IS NOT MOUNTED
E
F
G
H
I
J
K
L

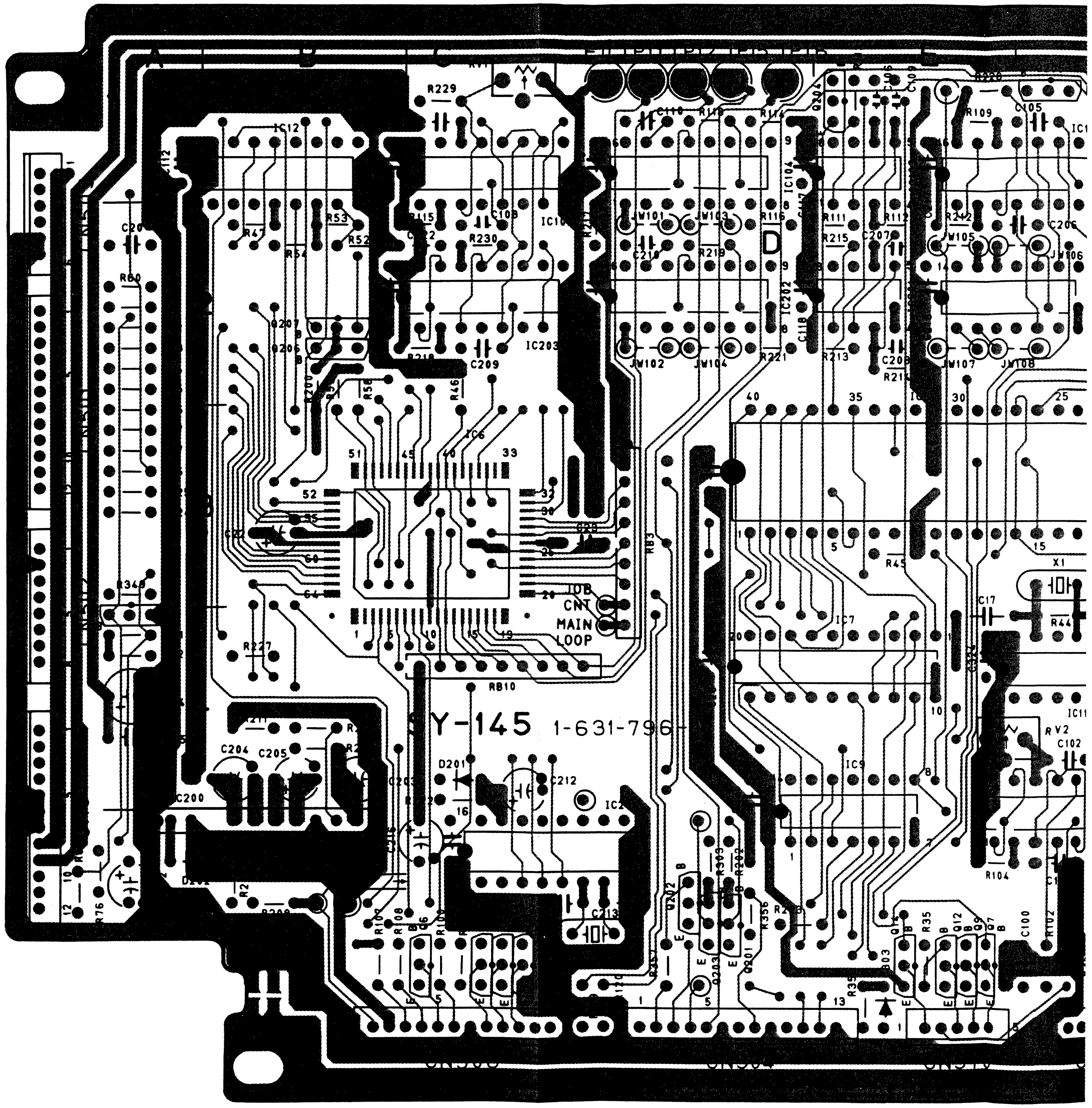
SY-145A(2/2)

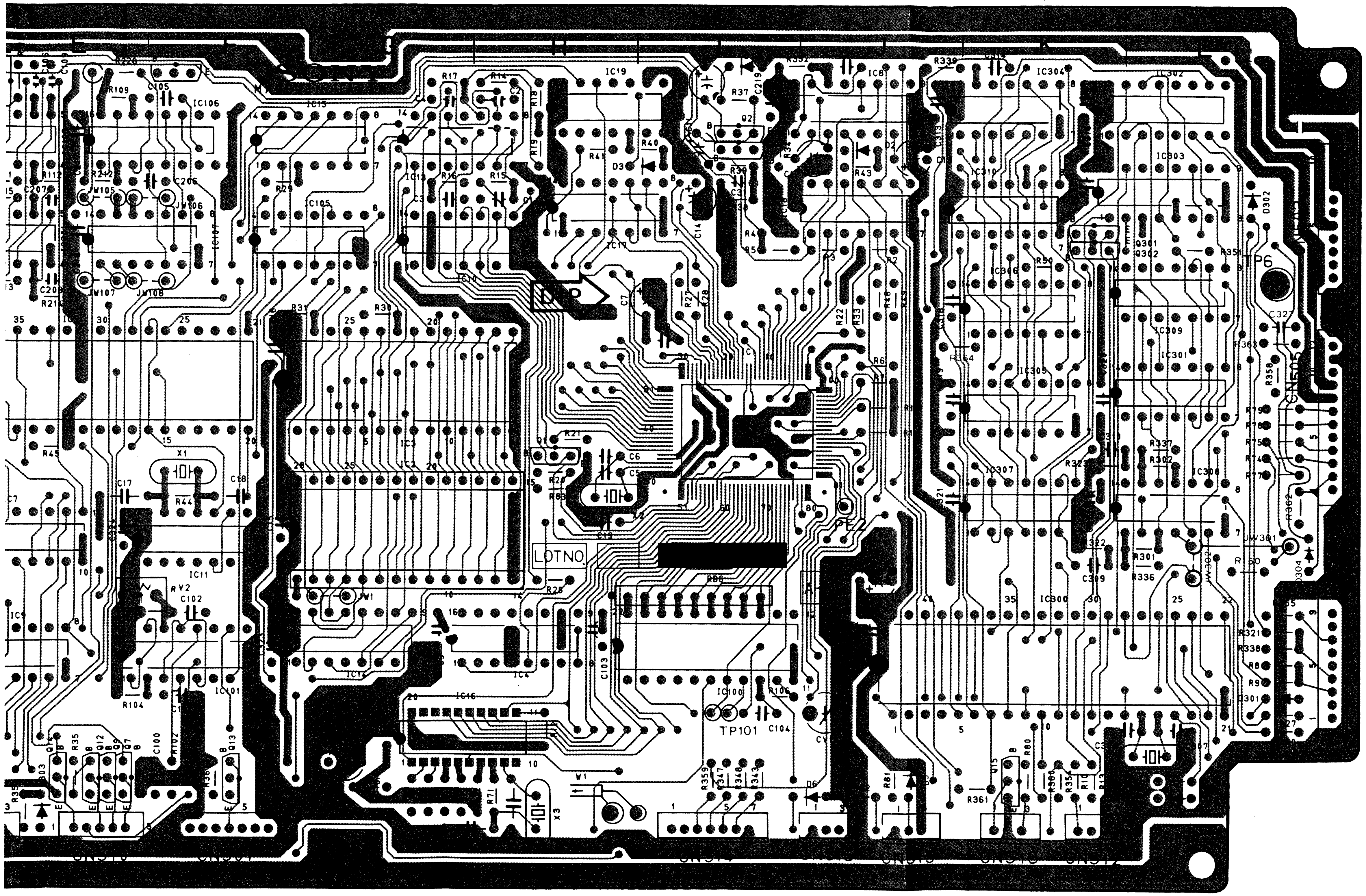
1-631-796-13, 14(1)
EVO-9800P

SY-145A; SYSTEM CONTROL

SY-145A(1-631-796-13, 14) A SIDE

CNI2	G-3	IC106	F-1	X1	F-3
CN501	A-3	IC107	F-2	X2	H-4
CN502	A-3	IC200	A-4	X3	H-5
CN503	L-2	IC201	E-2	X4	L-5
CN504	D-5	IC202	D-2	X5	C-5
CN505	L-3	IC203	C-2		
CN506	L-4	IC204	D-4		
CN507	F-5	IC300	K-4		
CN508	C-5	IC301	L-3		
CN509	A-2	IC302	L-1		
CN510	E-5	IC303	L-1		
CN511	A-4	IC304	K-1		
CN512	K-5	IC305	K-3		
CN513	K-5	IC306	K-2		
CN514	I-5	IC307	K-3		
CN515	J-5	IC308	L-3		
CN516	J-5	IC309	L-3		
		IC310	K-2		
CV100	J-5				
		PS1	L-1		
D1	I-1				
D2	J-1	Q1	H-3		
D3	H-2	Q2	I-1		
D5	J-5	Q3	I-1		
D6	J-5	Q4	A-4		
D201	C-4	Q6	C-5		
D202	A-5	Q7	E-5		
D203	L-5	Q8	C-5		
D301	L-5	Q9	E-5		
D302	L-2	Q10	C-5		
		Q11	C-5		
E1	C-1	Q12	E-5		
		Q13	F-5		
IC1	I-3	Q14	E-5		
IC2	G-3	Q15	K-5		
IC3	G-3	Q201	D-5		
IC4	H-5	Q202	D-5		
IC5	E-2	Q203	D-5		
IC6	C-3	Q204	E-1		
IC7	E-4	Q205	F-1		
IC8	J-1	Q206	B-2		
IC9	E-4	Q207	B-2		
IC10	G-2	Q301	L-2		
IC11	F-4	Q302	L-2		
IC12	B-1				
IC13	G-2	RB3	D-3		
IC14	G-5	RB6	I-4		
IC15	G-1	RB10	C-4		
IC16	G-5				
IC17	H-2	RV1	C-1		
IC18	I-2	RV2	F-4		
IC19	H-1				
IC100	I-5	TP6	L-2		
IC101	F-5	TP11	D-1		
IC102	C-2	TP12	D-1		
IC103	E-1	TP15	D-1		
IC104	D-1	TP16	D-1		
IC105	G-2	TP101	I-5		


A
B
C
D
SY-145 1-631-796
IC12
IC6
IC7
IC9
IC104
IC202
IC203
RB3
RB10
X1
RV2
C204
C205
C200
D201
C212
R229
R53
R52
R54
R47
R60
R227
R346
R76
R109
C105
JW101
JW103
JW105
JW106
JW102
JW104
JW107
JW108
IOB CNT
MAIN LOOP
R104
R102
C100
C17
R44
R45


SONY
IC19
IC15
IC106
IC105
IC13
IC17
IC14
IC8
IC304
IC302
IC303
IC310
IC306
IC309
IC301
IC305
IC307
IC308
IC300
IC3
IC2
IC11
IC12
IC4
IC16
IC100
IC101
IC9
X1
X3
RV2
TP101
TP6
LOTNO.
CN505
JW105
JW106
JW107
JW108
JW301
JW302
D302
D304
Q301
Q302
R86
R44
R45
R104
C100
C102
C103
C104
W1

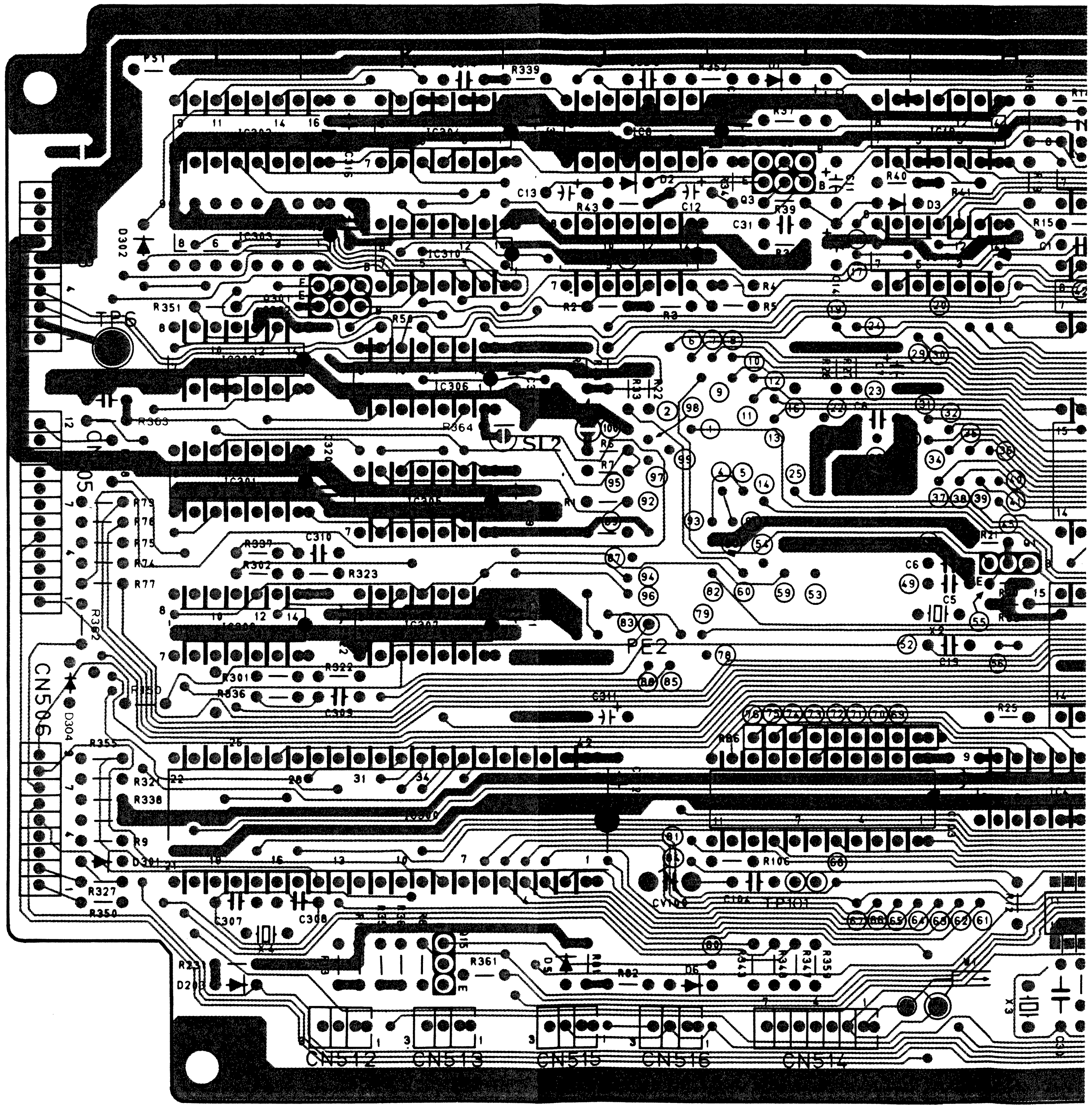
SY-145/A A SIDE
1-631-796-13, 14(1)
EVO-9800P
EVO-9800P

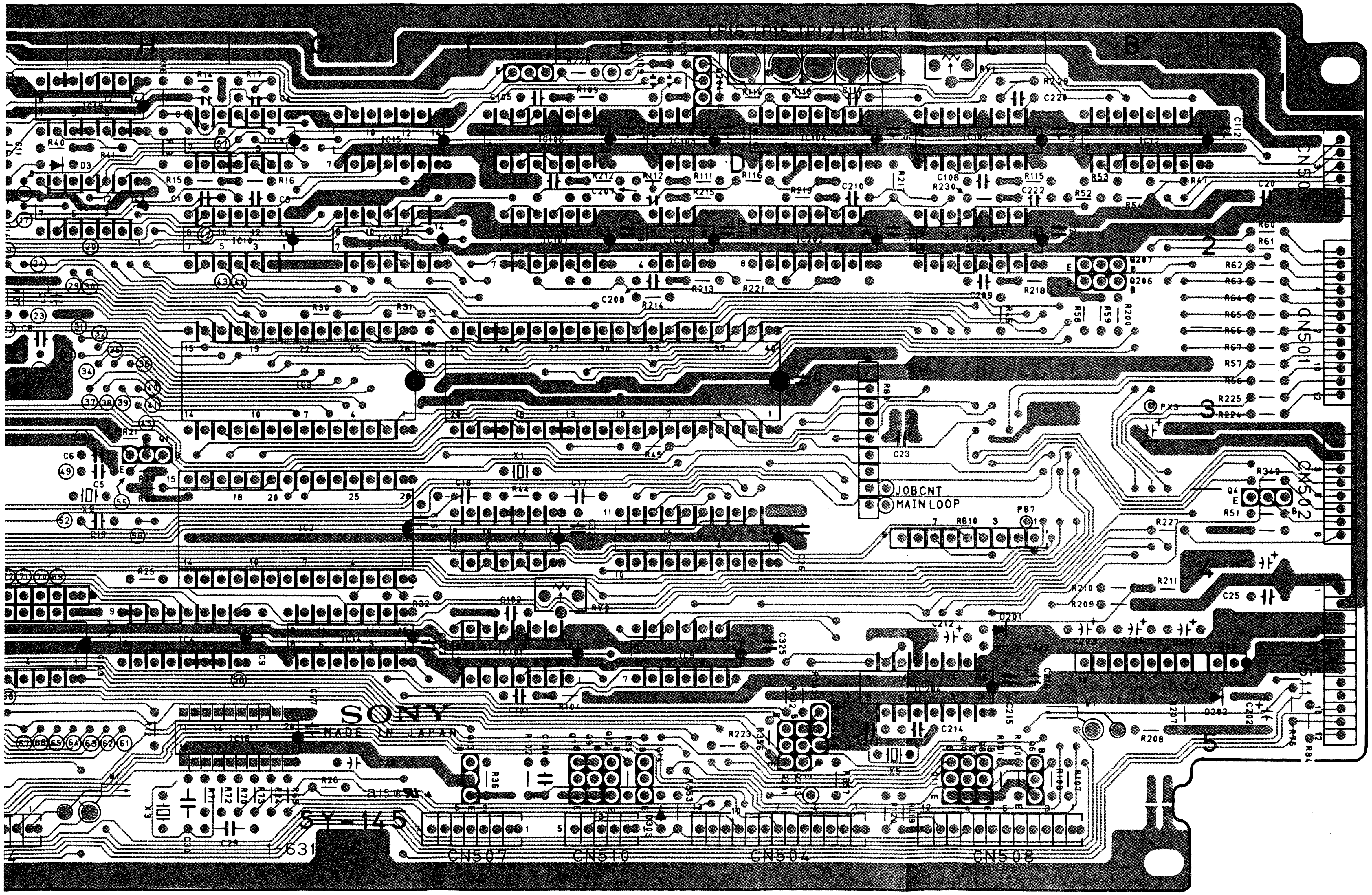
A Side is the same as COMPONENT Side

SY-145A; SYSTEM CONTROL

SY-145A(1-631-796-13, 14) B SIDE

CNI2	G-3	IC106	F-1	X1	F-3
CN501	A-3	IC107	F-2	X2	H-4
CN502	A-3	IC200	A-4	X3	H-5
CN503	L-2	IC201	E-2	X4	L-5
CN504	D-5	IC202	D-2	X5	C-5
CN505	L-3	IC203	C-2		
CN506	L-4	IC204	D-4		
CN507	F-5	IC300	K-4		
CN508	C-5	IC301	L-3		
CN509	A-2	IC302	L-1		
CN510	E-5	IC303	L-1		
CN511	A-4	IC304	K-1		
CN512	K-5	IC305	K-3		
CN513	K-5	IC306	K-2		
CN514	I-5	IC307	K-3		
CN515	J-5	IC308	L-3		
CN516	J-5	IC309	L-3		
		IC310	K-2		
CV100	J-5				
		PS1	L-1		
D1	I-1				
D2	J-1	Q1	H-3		
D3	H-2	Q2	I-1		
D5	J-5	Q3	I-1		
D6	J-5	Q4	A-4		
D201	C-4	Q6	C-5		
D202	A-5	Q7	E-5		
D203	L-5	Q8	C-5		
D301	L-5	Q9	E-5		
D302	L-2	Q10	C-5		
		Q11	C-5		
E1	C-1	Q12	E-5		
		Q13	F-5		
IC1	I-3	Q14	E-5		
IC2	G-3	Q15	K-5		
IC3	G-3	Q201	D-5		
IC4	H-5	Q202	D-5		
IC5	E-2	Q203	D-5		
IC6	C-3	Q204	E-1		
IC7	E-4	Q205	F-1		
IC8	J-1	Q206	B-2		
IC9	E-4	Q207	B-2		
IC10	G-2	Q301	L-2		
IC11	F-4	Q302	L-2		
IC12	B-1				
IC13	G-2	RB3	D-3		
IC14	G-5	RB6	I-4		
IC15	G-1	RB10	C-4		
IC16	G-5				
IC17	H-2	RV1	C-1		
IC18	I-2	RV2	F-4		
IC19	H-1				
IC100	I-5	TP6	L-2		
IC101	F-5	TP11	D-1		
IC102	C-2	TP12	D-1		
IC103	E-1	TP15	D-1		
IC104	D-1	TP16	D-1		
IC105	G-2	TP101	I-5		


PS1
R339
D302
TP6
R351
R363
SL2
R364
PE2
CN506
D304
R353
R336
R327
R350
C307
C308
X4
R361
D5
D6
TP101
CV100
R106
C310
R323
R25
R21
X2
C6
C5
X3
CN512
CN513
CN515
CN516
CN514


H
G
F
E
D
C
B
A
TP16 TP15 TP12 TP11 E1
1
2
3
4
5
CN509
CN501
CN502
CN511
CN507
CN510
CN504
CN508
IC1
IC2
IC3
IC4
IC9
IC10
IC12
IC13
IC14
IC15
IC16
IC101
IC102
IC103
IC104
IC105
IC106
IC107
IC201
IC202
IC203
IC204
X1
X2
X3
X5
RV1
RV2
PX3
PB7
RB8
RB10
JOBCNT
MAIN LOOP
C23
C25
D3
D201
D202
D203
Q4
Q206
Q207
R224
R225
R227
R56
R57
R58
R59
R60
R61
R62
R63
R64
R65
R66
R67
R200
R208
R209
R210
R211
R218
R349
SONY
MADE IN JAPAN
SY-145
1-631-796

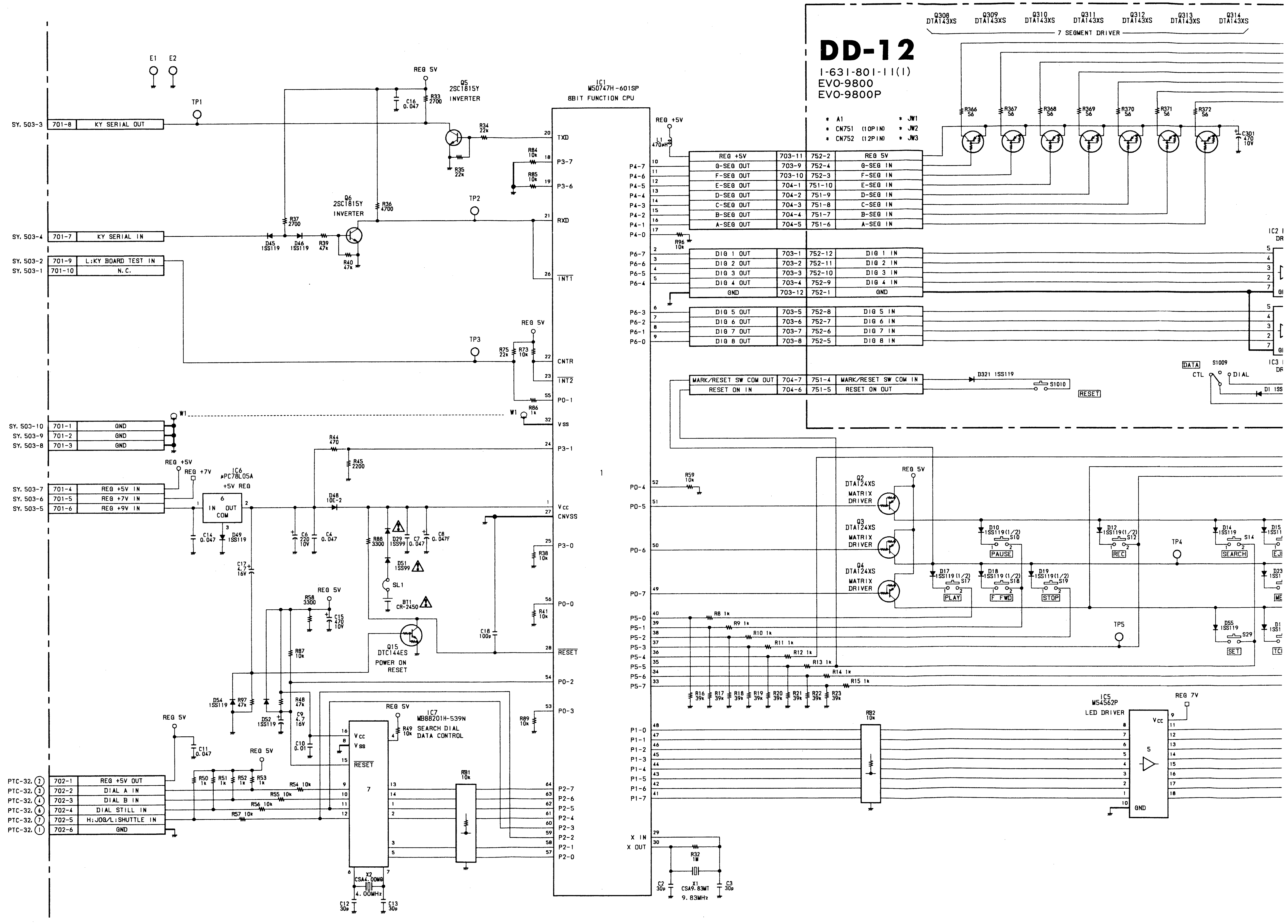
SY-145/A -- B SIDE --
1-631-796-13, 14(1)
EVO-9800
EVO-9800P

B Side is the same as SOLDER Side

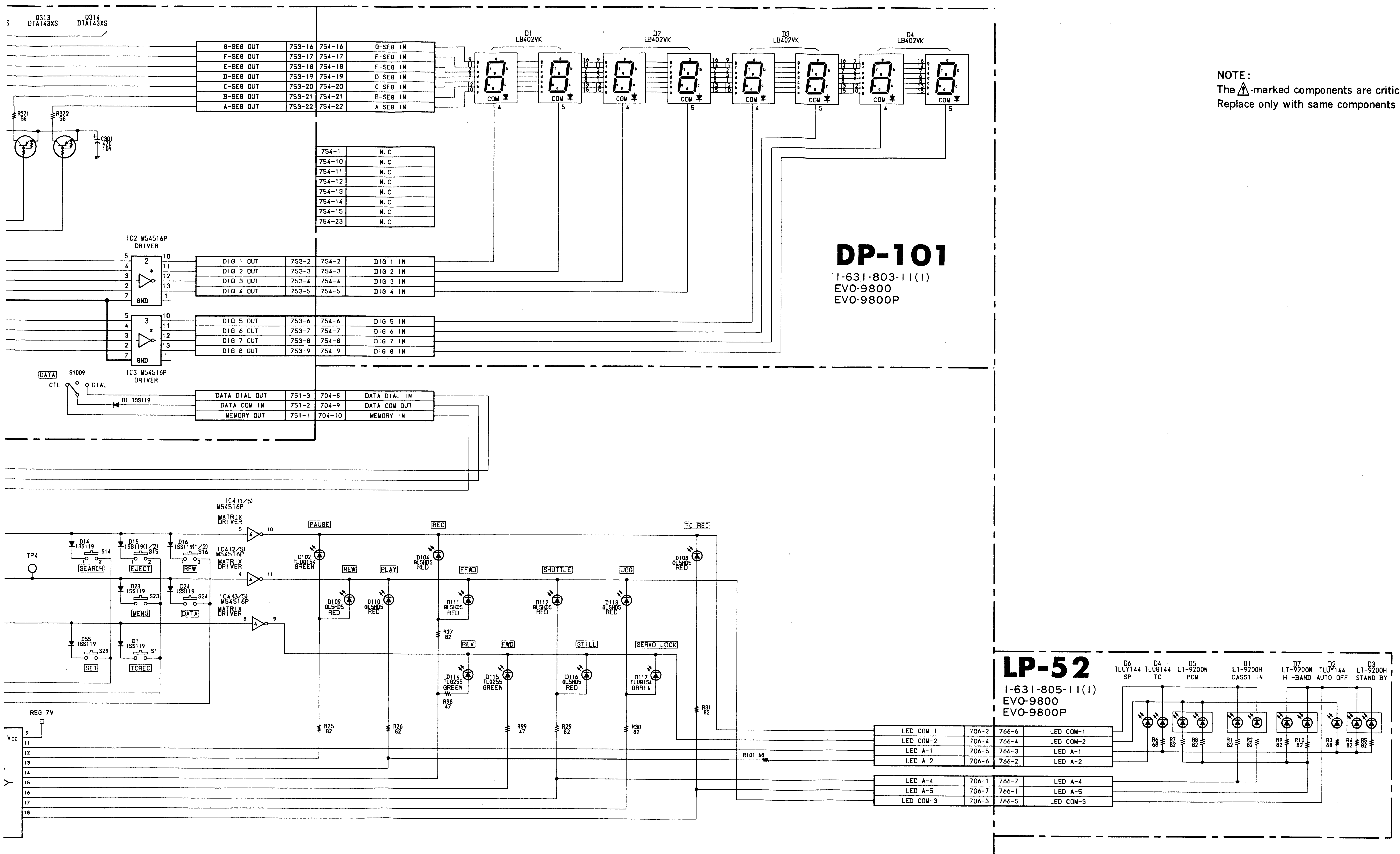
13-55

DD-12, DP-101, KY-162, LP-52

KY-162; FUNCTION KEY BOARD
DD-12; DISPLAY DRIVE
DP-101; DISPLAY
LP-52; MODE DISPLAY


DD-12
1-631-801-11(1)
EVO-9800
EVO-9800P
* A1 * JW1
* CN751 (10PIN) * JW2
* CN752 (12PIN) * JW3
Q308 DTA143XS
Q309 DTA143XS
Q310 DTA143XS
Q311 DTA143XS
Q312 DTA143XS
Q313 DTA143XS
Q314 DTA143XS
7 SEGMENT DRIVER
IC1 M50747H-601SP 8BIT FUNCTION CPU
Q5 2SC1815Y INVERTER
Q6 2SC1815Y INVERTER
IC6 μPC78L05A +5V REG
IC7 MB88201H-539N SEARCH DIAL DATA CONTROL
Q15 DTC144ES POWER ON RESET
Q2 DTA124XS MATRIX DRIVER
Q3 DTA124XS MATRIX DRIVER
Q4 DTA124XS MATRIX DRIVER
IC5 M54562P LED DRIVER
X1 CSA9.83MT 9.83MHz
X2 CSA4.00MG 4.00MHz
B11 CR-2450
SY.503-3 701-8 KY SERIAL OUT
SY.503-4 701-7 KY SERIAL IN
SY.503-2 701-9 L:KY BOARD TEST IN
SY.503-1 701-10 N.C.
SY.503-10 701-1 GND
SY.503-9 701-2 GND
SY.503-8 701-3 GND
SY.503-7 701-4 REG +5V IN
SY.503-6 701-5 REG +7V IN
SY.503-5 701-6 REG +9V IN
PTC-32.② 702-1 REG +5V OUT
PTC-32.③ 702-2 DIAL A IN
PTC-32.④ 702-3 DIAL B IN
PTC-32.⑥ 702-4 DIAL STILL IN
PTC-32.⑦ 702-5 H:JOG/L:SHUTTLE IN
PTC-32.① 702-6 GND
REG +5V 703-11 752-2 REG 5V
G-SEG OUT 703-9 752-4 G-SEG IN
F-SEG OUT 703-10 752-3 F-SEG IN
E-SEG OUT 704-1 751-10 E-SEG IN
D-SEG OUT 704-2 751-9 D-SEG IN
C-SEG OUT 704-3 751-8 C-SEG IN
B-SEG OUT 704-4 751-7 B-SEG IN
A-SEG OUT 704-5 751-6 A-SEG IN
DIG 1 OUT 703-1 752-12 DIG 1 IN
DIG 2 OUT 703-2 752-11 DIG 2 IN
DIG 3 OUT 703-3 752-10 DIG 3 IN
DIG 4 OUT 703-4 752-9 DIG 4 IN
GND 703-12 752-1 GND
DIG 5 OUT 703-5 752-8 DIG 5 IN
DIG 6 OUT 703-6 752-7 DIG 6 IN
DIG 7 OUT 703-7 752-6 DIG 7 IN
DIG 8 OUT 703-8 752-5 DIG 8 IN
MARK/RESET SW COM OUT 704-7 751-4 MARK/RESET SW COM IN
RESET ON IN 704-6 751-5 RESET ON OUT
TXD
RXD
INT1
CNTR
INT2
VSS
Vcc
CNVSS
RESET
X IN
X OUT
PAUSE
REC
SEARCH
PLAY
F FWD
STOP
SET
RESET
DATA
CTL
DIAL
TP1
TP2
TP3
TP4
TP5
REG 5V
REG 7V
1
2
3
4
5
A
B
C
D
E
F
G
H

NOTE:
The ⚠-marked components are critical to sefety.
Replace only with same components as specified.


DP-101
1-631-803-11(1)
EVO-9800
EVO-9800P
LP-52
1-631-805-11(1)
EVO-9800
EVO-9800P
Q313 DTA143XS
Q314 DTA143XS
D1 LB402VK
D2 LB402VK
D3 LB402VK
D4 LB402VK
G-SEG OUT 753-16 754-16 G-SEG IN
F-SEG OUT 753-17 754-17 F-SEG IN
E-SEG OUT 753-18 754-18 E-SEG IN
D-SEG OUT 753-19 754-19 D-SEG IN
C-SEG OUT 753-20 754-20 C-SEG IN
B-SEG OUT 753-21 754-21 B-SEG IN
A-SEG OUT 753-22 754-22 A-SEG IN
754-1 N.C
754-10 N.C
754-11 N.C
754-12 N.C
754-13 N.C
754-14 N.C
754-15 N.C
754-23 N.C
R371 56
R372 56
C301 470 10V
IC2 M54516P DRIVER
IC3 M54516P DRIVER
DIG 1 OUT 753-2 754-2 DIG 1 IN
DIG 2 OUT 753-3 754-3 DIG 2 IN
DIG 3 OUT 753-4 754-4 DIG 3 IN
DIG 4 OUT 753-5 754-5 DIG 4 IN
DIG 5 OUT 753-6 754-6 DIG 5 IN
DIG 6 OUT 753-7 754-7 DIG 6 IN
DIG 7 OUT 753-8 754-8 DIG 7 IN
DIG 8 OUT 753-9 754-9 DIG 8 IN
DATA S1009 CTL DIAL
D1 1SS119
DATA DIAL OUT 751-3 704-8 DATA DIAL IN
DATA COM IN 751-2 704-9 DATA COM OUT
MEMORY OUT 751-1 704-10 MEMORY IN
IC4 (1/5) M54516P MATRIX DRIVER
IC4 (2/5) M54516P MATRIX DRIVER
IC4 (3/5) M54516P MATRIX DRIVER
TP4
D14 1SS119 S14 SEARCH
D15 1SS119(1/2) S15 EJECT
D16 1SS119(1/2) S16 REW
D23 1SS119 S23 MENU
D24 1SS119 S24 DATA
D55 1SS119 S29 SET
D1 1SS119 S1 TCREC
PAUSE
REC
TC REC
REW
PLAY
FFWD
SHUTTLE
JOG
REV
FWD
STILL
SERVO LOCK
D102 TLUG154 GREEN
D104 GL5HD5 RED
D108 GL5HD5 RED
D109 GL5HD5 RED
D110 GL5HD5 RED
D111 GL5HD5 RED
D112 GL5HD5 RED
D113 GL5HD5 RED
D114 TLG255 GREEN
D115 TLG255 GREEN
D116 GL5HD5 RED
D117 TLUG154 GREEN
R27 82
R98 47
R25 82
R26 82
R99 47
R29 82
R30 82
R31 82
R101 68
REG 7V
Vcc
LED COM-1 706-2 766-6 LED COM-1
LED COM-2 706-4 766-4 LED COM-2
LED A-1 706-5 766-3 LED A-1
LED A-2 706-6 766-2 LED A-2
LED A-4 706-1 766-7 LED A-4
LED A-5 706-7 766-1 LED A-5
LED COM-3 706-3 766-5 LED COM-3
D6 TLUY144 SP
D4 TLUG144 TC
D5 LT-9200N PCM
D1 LT-9200H CASST IN
D7 LT-9200N HI-BAND
D2 TLUY144 AUTO OFF
D3 LT-9200H STAND BY
R6 68
R7 82
R8 82
R1 82
R2 82
R9 82
R10 82
R3 68
R4 82
R5 82

KY-162

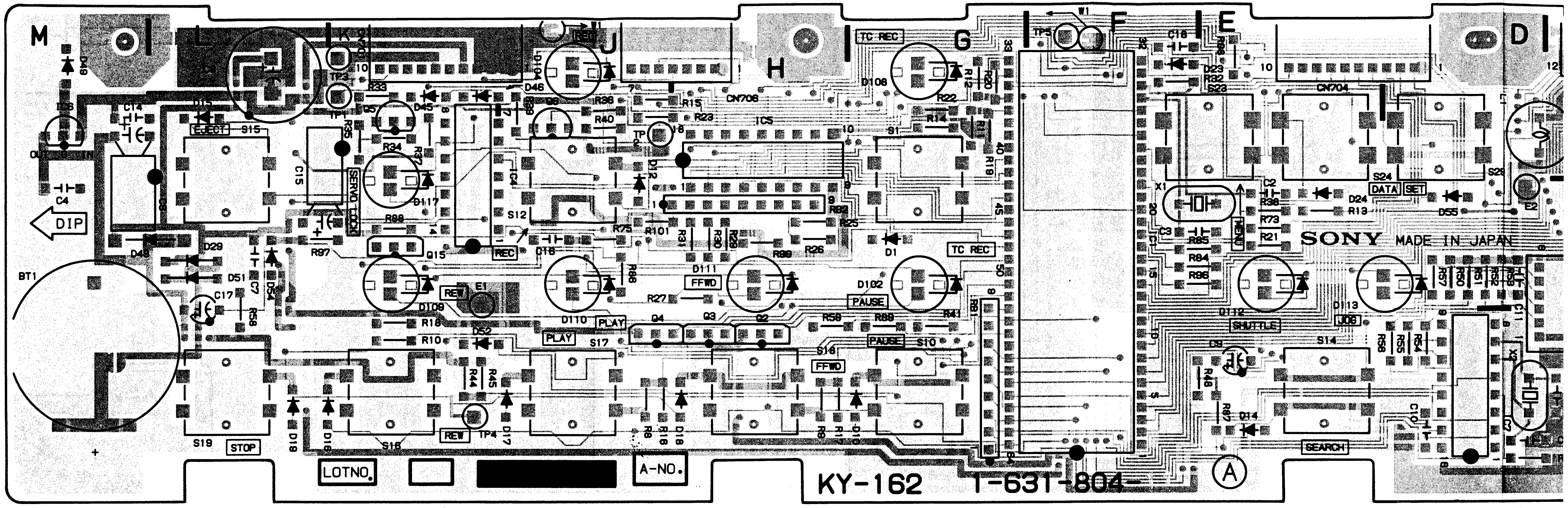
1-631-804-12(1)
EVO-9800
EVO-9800P

REF NO	TYPE	GND	+5V	PACKAGE
IC1	M50747-601SP	32	1	
IC2	M54516P	7		14PIN DIP
IC3	M54516P	7		14PIN DIP
IC4	M54516P	7		14PIN DIP
IC5	M54562P	10		18PIN DIP
IC6	µPC78M05H	3		
IC7	MB88201H-539N	8	16	16PIN DIP

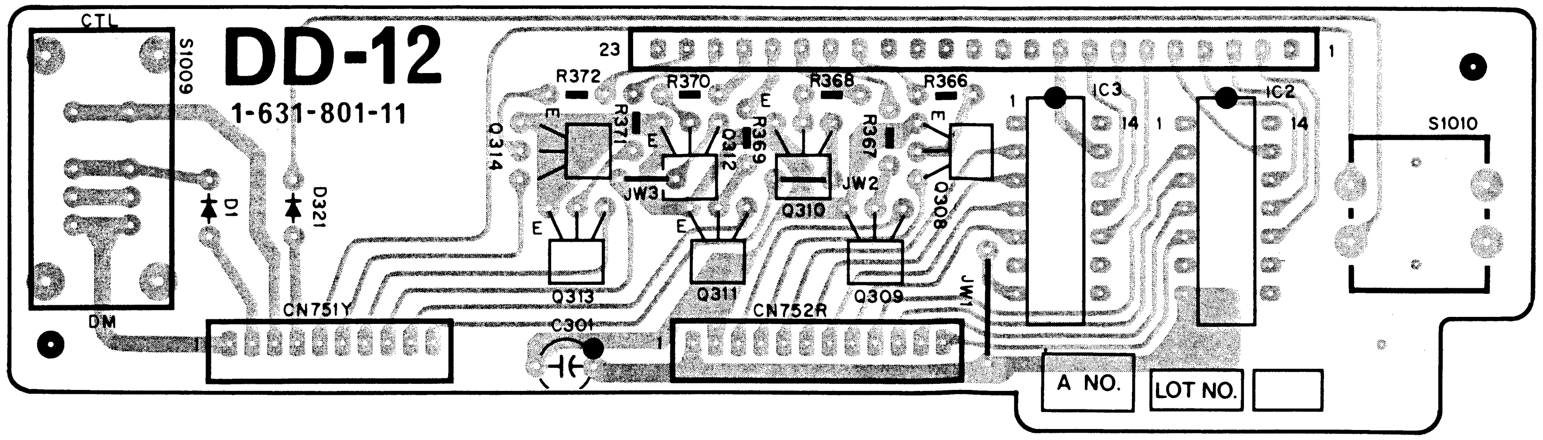
KY-162; FUNCTION KEY BOARD
DD-12; DISPLAY DRIVE
DP-101; DISPLAY
LP-52; MODE DISPLAY

KY-162(1-631-804-12) A SIDE

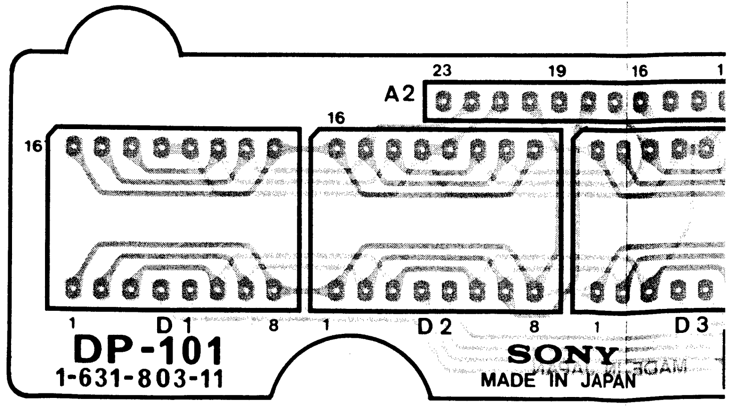
BT1	M-2	RB2	H-2
CN701	K-1	S1	G-1
CN702	C-2	S10	G-3
CN703	C-1	S12	J-2
CN704	E-1	S14	E-3
CN706	H-1	S15	L-1
		S16	K-3
D1	G-2	S17	J-3
D10	G-3	S18	H-3
D12	J-1	S19	L-3
D14	E-3	S23	E-1
D15	L-1	S24	D-1
D16	L-3	S29	D-1
D17	J-3		
D18	H-3	TP1	K-1
D19	L-3	TP2	J-1
D23	E-1	TP3	K-1
D24	E-2	TP4	K-3
D29	L-2	TP5	F-1
D45	K-1		
D46	J-1	X1	F-2
D48	M-2	X2	D-3
D49	M-1		
D51	L-2		
D52	K-3		
D54	L-2		
D55	D-2		
D102	G-2		
D104	J-1		
D108	G-1		
D109	K-2		
D110	J-3		
D111	H-2		
D112	E-3		
D113	E-2		
D114	B-1		
D115	A-1		
D116	B-1		
D117	K-2		
E1	K-2		
E2	D-2		
IC1	F-2		
IC4	J-1		
IC5	H-1		
IC6	M-1		
IC7	D-3		
Q2	H-3		
Q3	H-3		
Q4	J-3		
Q5	K-1		
Q6	J-1		
Q15	K-2		
RB1	G-2		


M
L
K
J
H
G
F
E
D
DIP
BT1
EJECT
S15
SERVO LOCK
REC
REW
PLAY
FFWD
PAUSE
TC REC
SHUTTLE
JOG
SEARCH
STOP
DATA
SET
MEMO
S1
S10
S12
S14
S16
S17
S18
S19
S23
S24
CN704
CN706
IC5
X1
SONY MADE IN JAPAN
LOTNO.
A-NO.
KY-162 1-631-804-
A

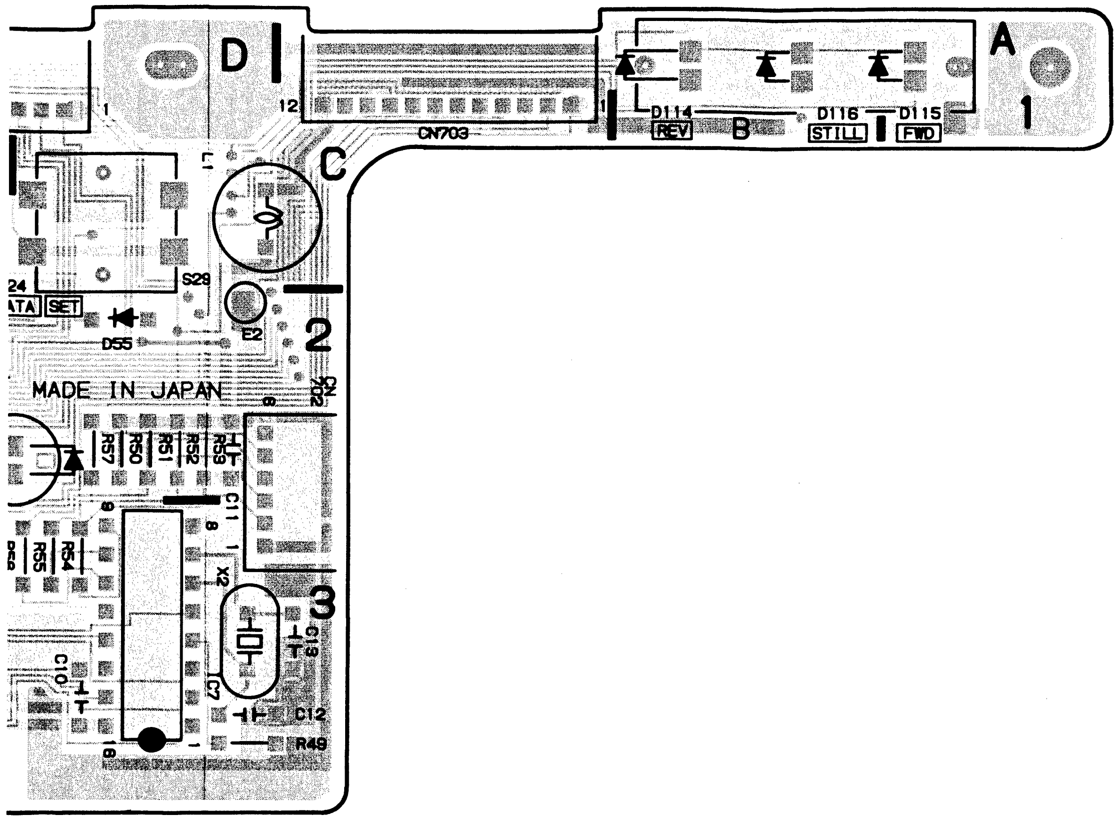
KY-162 —A SI
1-631-804-12(1)
EVO-9800


DD-12
1-631-801-11
CTL
S1009
S1010
D1
D321
DM
CN751Y
CN752R
C301
IC3
IC2
Q308
Q309
Q310
Q311
Q312
Q313
Q314
R366
R367
R368
R369
R370
R371
R372
JW1
JW2
JW3
23
1
A NO.
LOT NO.

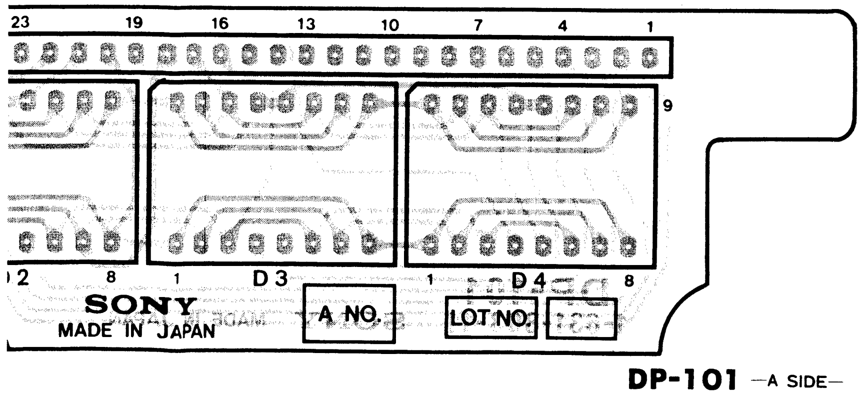
DD-12 —A SIDE—
1-631-801-11(1)
EVO-9800


A2
23
19
16
D1
D2
D3
DP-101
1-631-803-11
SONY
MADE IN JAPAN

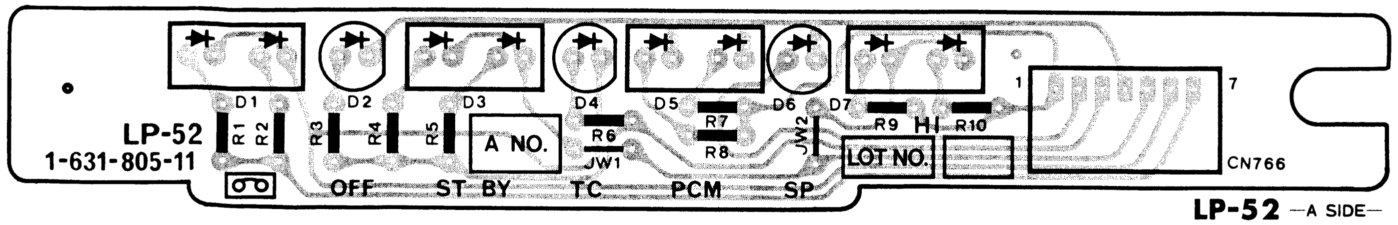
A Side is the same as COMPONENT Side


D
A
1
12
CN703
D114
REV
B
D116
STILL
D115
FWD
C
L1
24
SET
S29
D55
E2
2
MADE IN JAPAN
CN702
R57
R60
R61
R62
R63
C11
R54
R55
X2
3
C13
C10
C7
C12
R49
18
1

KY-162 —A SIDE—
1-631-804-12(1)
EVO-9800


23
19
16
13
10
7
4
1
9
2
8
1
D3
1
D4
8
SONY
MADE IN JAPAN
A NO.
LOT NO.

DP-101 —A SIDE—
1-631-803-11(1)
EVO-9800

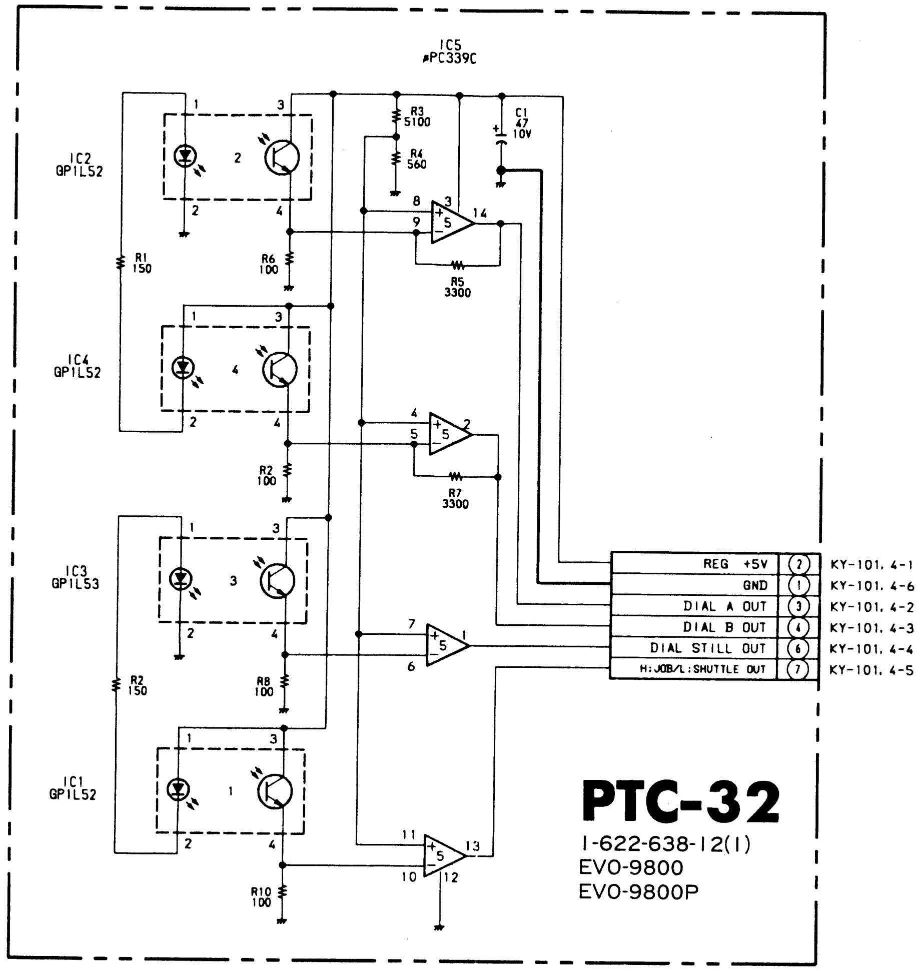

LP-52
1-631-805-11
D1
R1
R2
D2
R3
R4
R5
D3
A NO.
D4
R6
JW1
D5
R7
R8
JW2
D6
D7
R9
HI
R10
LOT NO.
1
7
CN766
OFF
ST BY
TC
PCM
SP

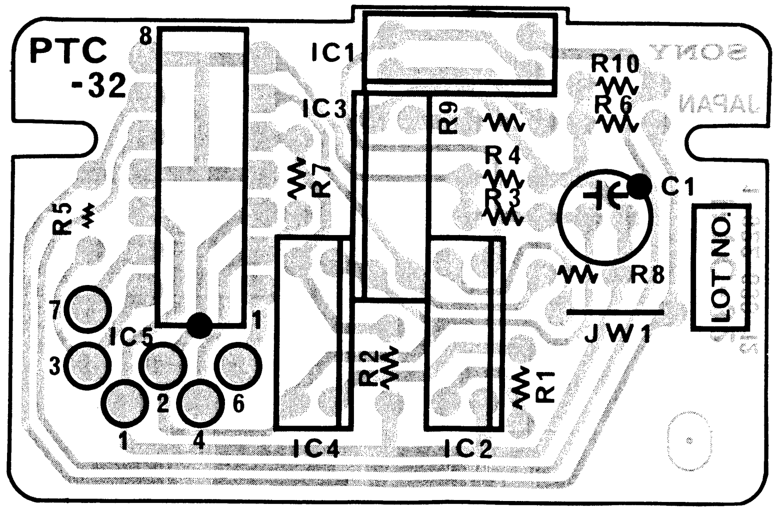
LP-52 —A SIDE—
1-631-805-11(1)
EVO-9800

PTC-32; SEARCH

A B C D E F G H I

PTC-32 ; SEARCH DIAL

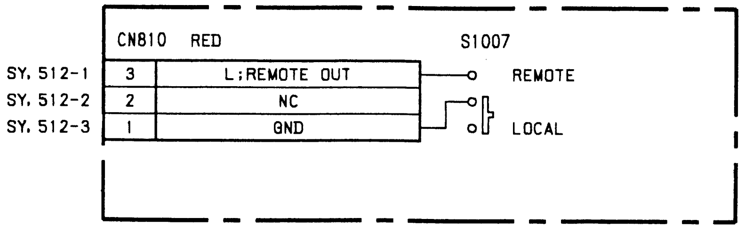

IC5
μPC339C
IC2
GP1L52
IC4
GP1L52
IC3
GP1L53
IC1
GP1L52
R1
150
R2
150
R3
5100
R4
560
C1
47
10V
R5
3300
R7
3300
R6
100
R2
100
R8
100
R10
100
REG +5V ②
GND ①
DIAL A OUT ③
DIAL B OUT ④
DIAL STILL OUT ⑥
H:JOB/L:SHUTTLE OUT ⑦
KY-101, 4-1
KY-101, 4-6
KY-101, 4-2
KY-101, 4-3
KY-101, 4-4
KY-101, 4-5
PTC-32
1-622-638-12(1)
EVO-9800
EVO-9800P


PTC
-32
8
IC1
IC3
R10
R6
R9
R4
R3
C1
R7
R5
LOT NO.
R8
JW1
7
IC5
1
3
2
6
1
4
IC4
IC2
R2
R1
SONY
JAPAN

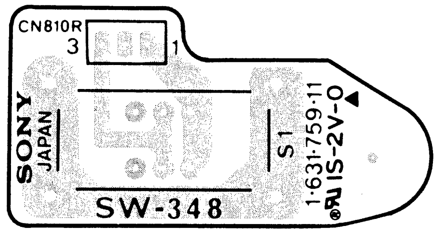
PTC-32 —A SIDE—
1-622-638-12(1)
EVO-9800
EVO-9800P

A Side is the same as COMPONENT Side

SW-348 ; REMOTE PANEL SWITCH


CN810 RED
S1007
SY, 512-1
SY, 512-2
SY, 512-3
3
2
1
L;REMOTE OUT
NC
GND
REMOTE
LOCAL

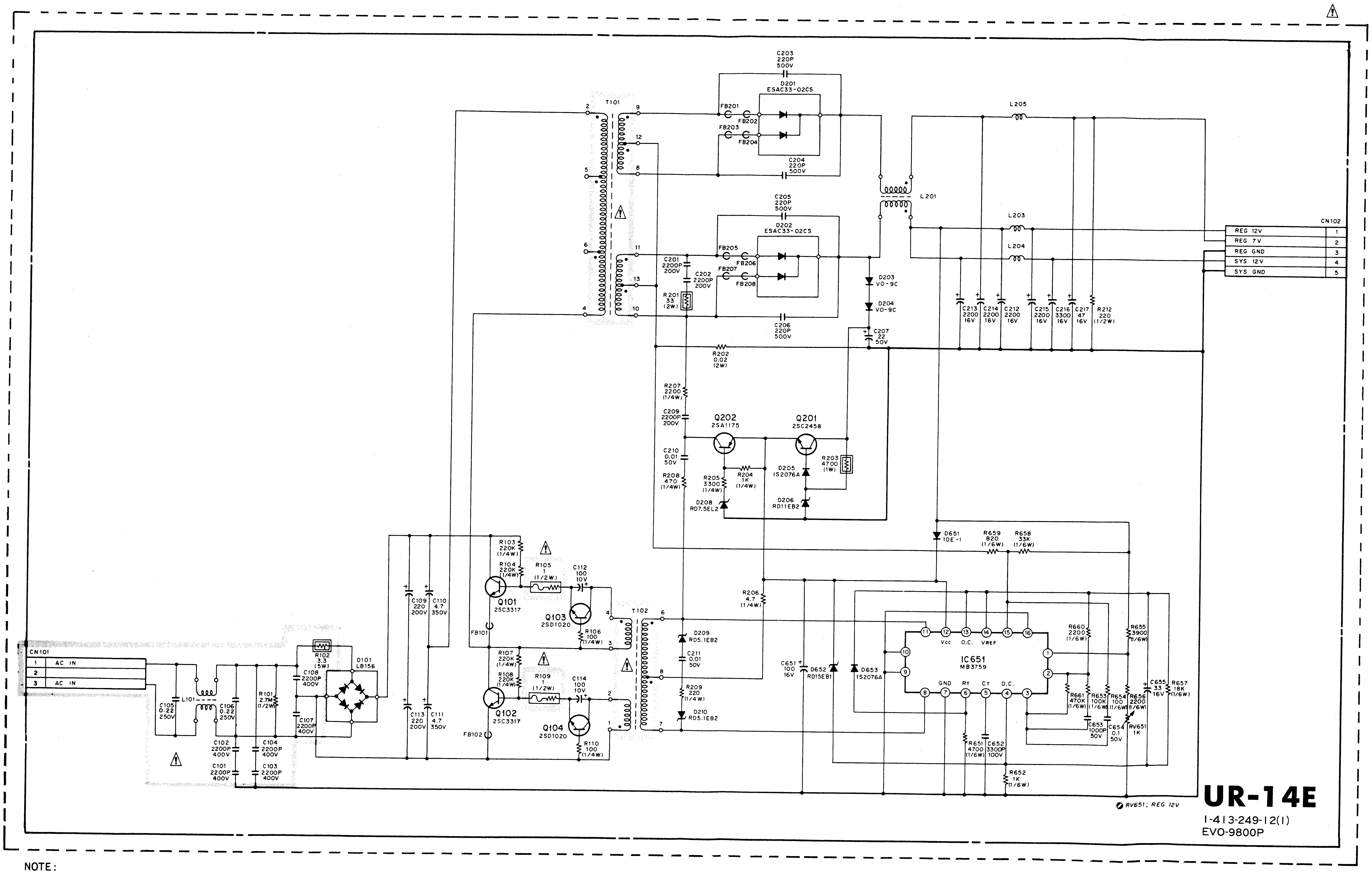
SW-348
1-631-759-11(1)
EVO-9800
EVO-9800P


CN810R
3
1
SONY
JAPAN
S1
1-631-759-11
IS-2V-0
SW-348

SW-348 —B SIDE—
1-631-759-11(1)
EVO-9800
EVO-9800P

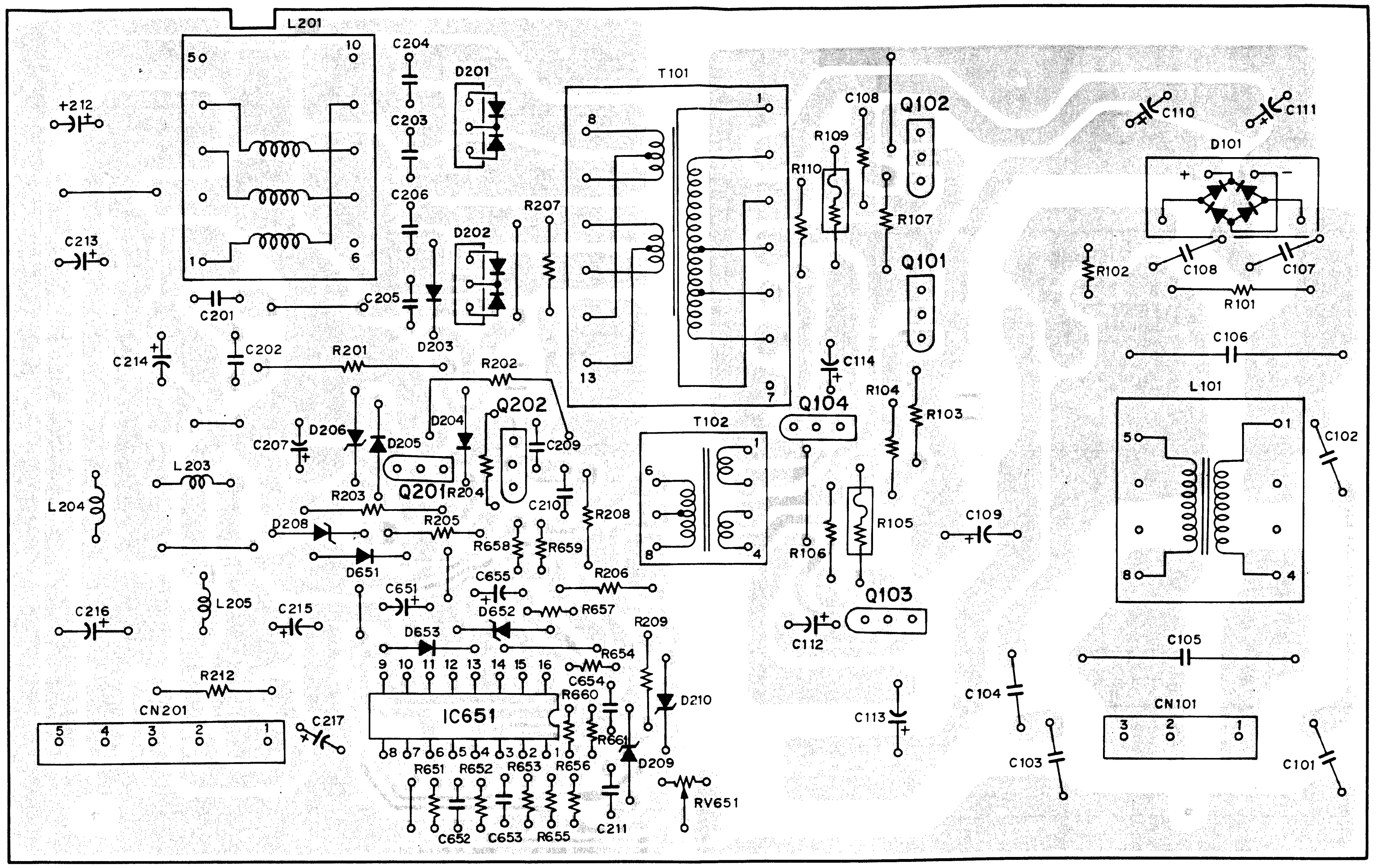
B Side is the same as SOLDER Side

UR-14E; SWITCHING REGULATOR

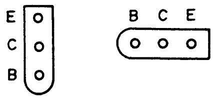

CN101
1 AC IN
2
3 AC IN
C105 0.22 250V
L101
C106 0.22 250V
R101 2.7M (1/2W)
C102 2200P 400V
C104 2200P 400V
C101 2200P 400V
C103 2200P 400V
R102 3.3 (5W)
C108 2200P 400V
C107 2200P 400V
D101 LB156
C109 220 200V
C110 4.7 350V
C113 220 200V
C111 4.7 350V
R103 220K (1/4W)
R104 220K (1/4W)
R105 1 (1/2W)
C112 100 10V
Q101 2SC3317
Q103 2SD1020
R106 100 (1/4W)
FB101
R107 220K (1/4W)
R108 220K (1/4W)
R109 1 (1/2W)
C114 100 10V
Q102 2SC3317
Q104 2SD1020
R110 100 (1/4W)
FB102
T101
2 9 12 8 5 6 11 13 4 10
T102
4 3 6 8 2 1 7
C203 220P 500V
D201 ESAC33-02CS
FB201 FB202 FB203 FB204
C204 220P 500V
C205 220P 500V
D202 ESAC33-02CS
FB205 FB206 FB207 FB208
C201 2200P 200V
C202 2200P 200V
R201 33 (2W)
C206 220P 500V
L201
L205
L203
L204
D203 VO-9C
D204 VO-9C
C207 22 50V
R202 0.02 (2W)
C213 2200 16V
C214 2200 16V
C212 2200 16V
C215 2200 16V
C216 3300 16V
C217 47 16V
R212 220 (1/2W)
CN102
REG 12V 1
REG 7V 2
REG GND 3
SYS 12V 4
SYS GND 5
R207 2200 (1/4W)
C209 2200P 200V
Q202 2SA1175
Q201 2SC2458
C210 0.01 50V
R208 470 (1/4W)
R205 3300 (1/4W)
R204 1K (1/4W)
D205 1S2076A
R203 4700 (1W)
D206 RD11EB2
D208 RD7.5EL2
R206 4.7 (1/4W)
D209 RD5.1EB2
C211 0.01 50V
R209 220 (1/4W)
D210 RD5.1EB2
C651 100 16V
D652 RD15EB1
D653 1S2076A
D651 10E-1
R659 820 (1/6W)
R658 33K (1/6W)
IC651 MB3759
11 12 13 14 15 16
Vcc O.C. VREF
10 9 1 2
GND RT CT D.C.
8 7 6 5 4 3
R660 2200 (1/6W)
R655 3900 (1/6W)
C655 33 16V
R657 18K (1/6W)
R661 470K (1/6W)
R653 100K (1/6W)
R654 100 (1/6W)
R656 2200 (1/6W)
C653 1000P 50V
C654 0.1 50V
RV651 1K
R651 4700 (1/6W)
C652 3300P 100V
R652 1K (1/6W)
RV651; REG 12V
UR-14E
1-413-249-12(1)
EVO-9800P

NOTE:
The ⚠ -marked components are critical to sefety.
Replace only with same components as specified.

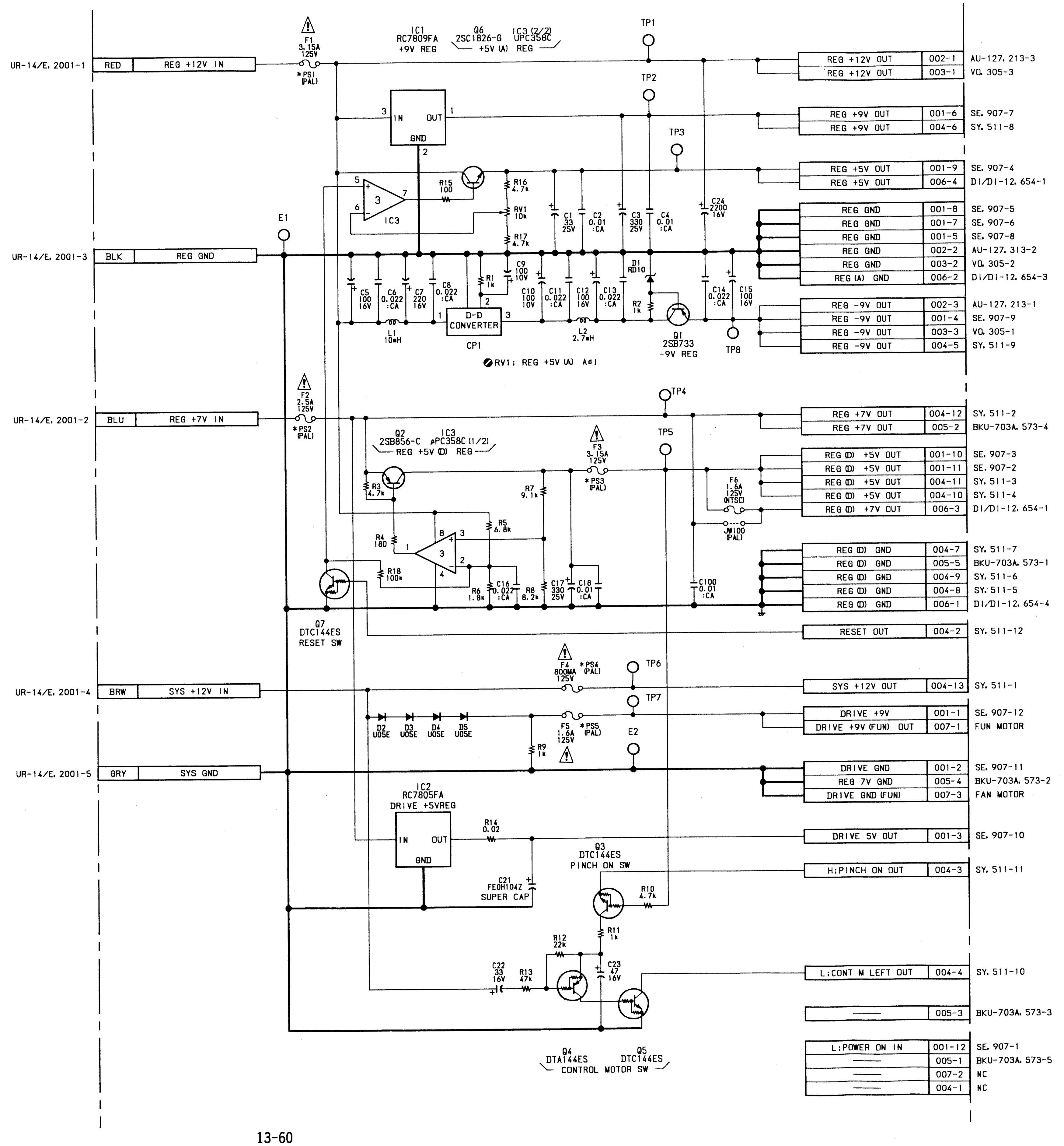
UR-14E; SWITCHING REGULATOR


L201
C204
D201
T101
C108
Q102
C110
C111
D101
+212
C203
R109
R110
R107
C206
R207
D202
C213
C201
C205
D203
Q101
R102
C108
C107
R101
C214
C202
R201
R202
C114
C106
R104
R103
Q104
L101
C207
D206
D205
D204
Q202
C209
T102
C102
L203
Q201
R204
R203
C210
R208
L204
D208
R205
R105
C109
R658
R659
R106
D651
C655
R206
C651
D652
R657
Q103
C216
L205
C215
D653
R209
C112
C105
R654
C654
R660
D210
C104
R212
CN101
CN201
C217
IC651
R661
C113
C103
C101
D209
R651
R652
R653
R656
RV651
C652
C653
R655
C211

UR-14E —B SIDE—
1-413-249-12(1)
EVO-9800P



B Side is the same as SOLDER Side


UR-14/E. 2001-1
RED
REG +12V IN
UR-14/E. 2001-3
BLK
REG GND
UR-14/E. 2001-2
BLU
REG +7V IN
UR-14/E. 2001-4
BRW
SYS +12V IN
UR-14/E. 2001-5
GRY
SYS GND
F1 3.15A 125V
*PS1 (PAL)
IC1 RC7809FA +9V REG
Q6 2SC1826-G
IC3 (2/2) UPC358C
+5V (A) REG
TP1
TP2
TP3
TP4
TP5
TP6
TP7
TP8
E1
E2
IN
OUT
GND
R15 100
R16 4.7k
RV1 10k
R17 4.7k
IC3
C1 33 25V
C2 0.01 :CA
C3 330 25V
C4 0.01 :CA
C24 2200 16V
C5 100 16V
C6 0.022 :CA
C7 220 16V
C8 0.022 :CA
R1 1k
C9 100 10V
C10 100 10V
C11 0.022 :CA
C12 100 16V
C13 0.022 :CA
D1 RD10
R2 1k
C14 0.022 :CA
C15 100 16V
L1 10mH
D-D CONVERTER
CP1
L2 2.7mH
Q1 2SB733 -9V REG
RV1: REG +5V (A) Adj
F2 2.5A 125V
*PS2 (PAL)
Q2 2SB856-C
IC3 μPC358C (1/2)
REG +5V (D) REG
F3 3.15A 125V
*PS3 (PAL)
R3 4.7k
R7 9.1k
R4 180
R5 6.8k
R18 100k
R6 1.8k
C16 0.022 :CA
R8 8.2k
C17 330 25V
C18 0.01 :CA
F6 1.6A 125V (NTSC)
JW100 (PAL)
C100 0.01 :CA
Q7 DTC144ES RESET SW
F4 800MA 125V
*PS4 (PAL)
D2 U05E
D3 U05E
D4 U05E
D5 U05E
F5 1.6A 125V
*PS5 (PAL)
R9 1k
IC2 RC7805FA DRIVE +5VREG
R14 0.02
C21 FE0H104Z SUPER CAP
Q3 DTC144ES PINCH ON SW
R10 4.7k
R11 1k
R12 22k
C22 33 16V
R13 47k
C23 47 16V
Q4 DTA144ES
Q5 DTC144ES
CONTROL MOTOR SW
REG +12V OUT 002-1 AU-127, 213-3
REG +12V OUT 003-1 VO, 305-3
REG +9V OUT 001-6 SE, 907-7
REG +9V OUT 004-6 SY, 511-8
REG +5V OUT 001-9 SE, 907-4
REG +5V OUT 006-4 DI/DI-12, 654-1
REG GND 001-8 SE, 907-5
REG GND 001-7 SE, 907-6
REG GND 001-5 SE, 907-8
REG GND 002-2 AU-127, 313-2
REG GND 003-2 VO, 305-2
REG (A) GND 006-2 DI/DI-12, 654-3
REG -9V OUT 002-3 AU-127, 213-1
REG -9V OUT 001-4 SE, 907-9
REG -9V OUT 003-3 VO, 305-1
REG -9V OUT 004-5 SY, 511-9
REG +7V OUT 004-12 SY, 511-2
REG +7V OUT 005-2 BKU-703A, 573-4
REG (D) +5V OUT 001-10 SE, 907-3
REG (D) +5V OUT 001-11 SE, 907-2
REG (D) +5V OUT 004-11 SY, 511-3
REG (D) +5V OUT 004-10 SY, 511-4
REG (D) +7V OUT 006-3 DI/DI-12, 654-1
REG (D) GND 004-7 SY, 511-7
REG (D) GND 005-5 BKU-703A, 573-1
REG (D) GND 004-9 SY, 511-6
REG (D) GND 004-8 SY, 511-5
REG (D) GND 006-1 DI/DI-12, 654-4
RESET OUT 004-2 SY, 511-12
SYS +12V OUT 004-13 SY, 511-1
DRIVE +9V 001-1 SE, 907-12
DRIVE +9V (FUN) OUT 007-1 FUN MOTOR
DRIVE GND 001-2 SE, 907-11
REG 7V GND 005-4 BKU-703A, 573-2
DRIVE GND (FUN) 007-3 FAN MOTOR
DRIVE 5V OUT 001-3 SE, 907-10
H:PINCH ON OUT 004-3 SY, 511-11
L:CONT M LEFT OUT 004-4 SY, 511-10
005-3 BKU-703A, 573-3
L:POWER ON IN 001-12 SE, 907-1
005-1 BKU-703A, 573-5
007-2 NC
004-1 NC

NOTE) *・・・for PAL model

NTSC/PAL

NTSC REF.	NTSC P No.	PAL REF.	PAL P No.
F1	1-532-781-21	PS1	1-532-844-21
F2	1-532-701-11	PS2	1-532-286-11
F3	1-532-781-21	PS3	1-532-844-21
F4	1-532-775-21	PS4	1-532-838-21
F5	1-532-778-21	PS5	1-532-841-21
F6	1-532-778-21		:NM

NOTE) Mount JW100
only PAL model.

NOTE:
The ⚠-marked components are critical to sefety.
Replace only with same components as specified.

DC-45A

1-631-800-21(1)
EVO-9800P

DC-45A(1-631-800-21) A

CN1	A-3
CN2	A-2
CN3	F-1
CN4	F-4
CN5	F-2
CN6	F-3
CN7	A-4
CP1	B-3
D1	B-2
D2	E-4
D3	E-4
D4	E-3
D5	E-3
E1	E-1S
E2	B-1S
F2	D-3
PS1	D-4
PS3	E-2
PS4	F-3
PS5	C-4
IC1	D-1
IC2	D-1
IC3	F-2
Q1	C-3
Q2	E-1
Q3	F-4
Q4	F-4
Q5	F-4
Q6	C-1
Q7	F-2
RV1	F-1
TP1	B-1S
TP2	F-1S
TP3	C-1S
TP4	F-1S
TP5	B-1S
TP6	F-1S
TP7	C-1S
TP8	E-1S

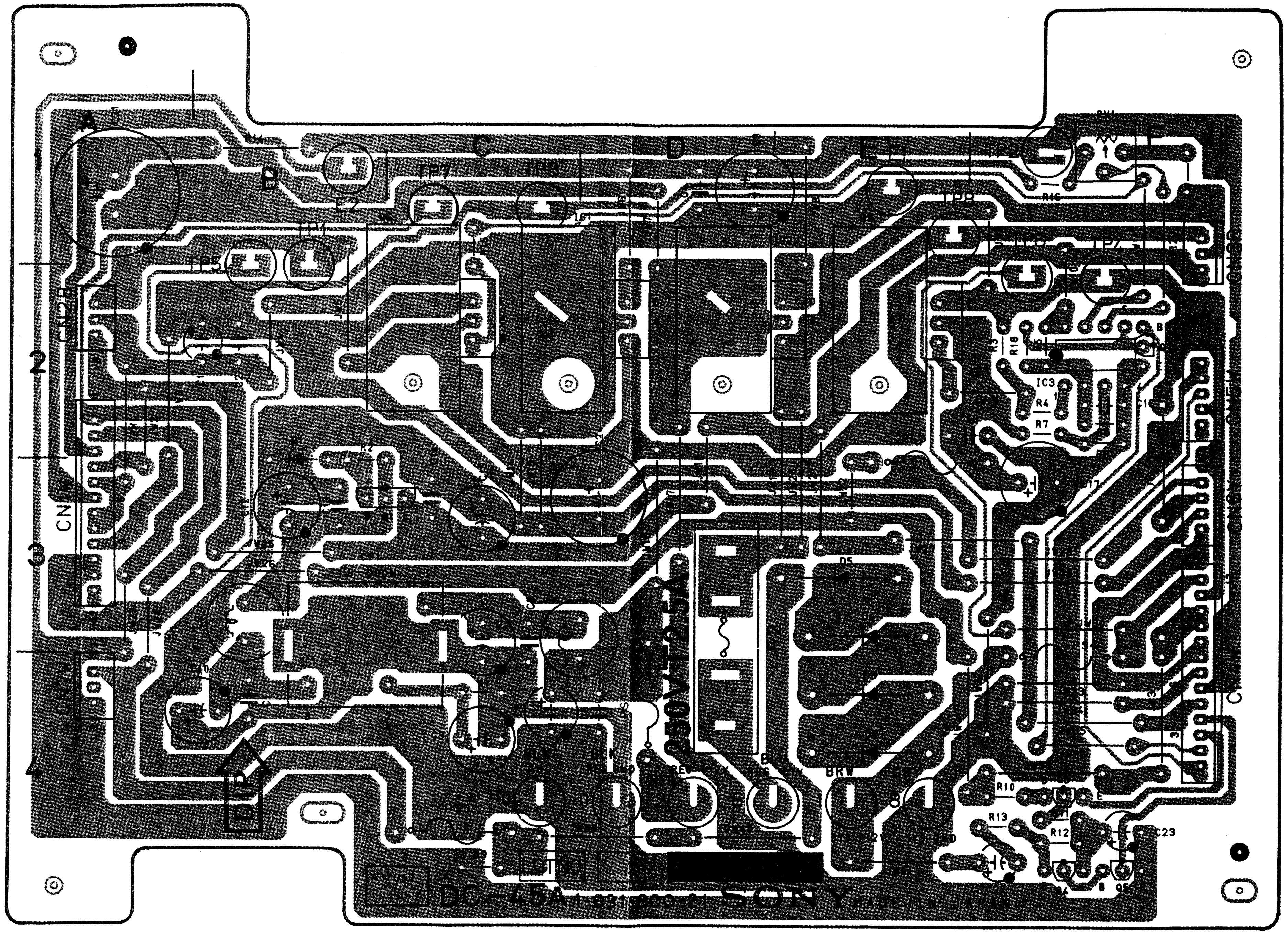
S: B SIDE (SOLDERING

DC-45A; DC SUPPLY

DC-45A(1-631-800-21) A SIDE

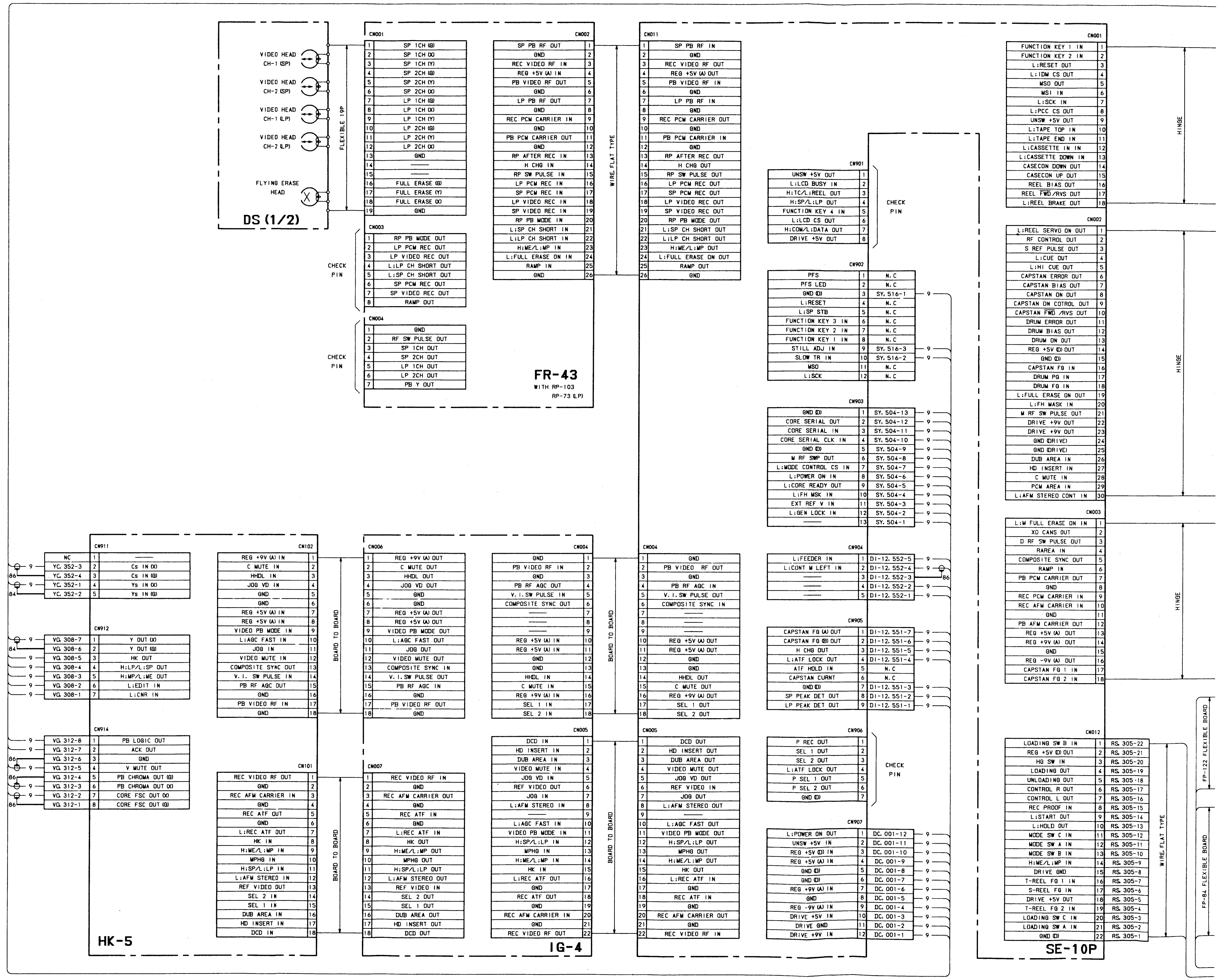
CN1	A-3
CN2	A-2
CN3	F-1
CN4	F-4
CN5	F-2
CN6	F-3
CN7	A-4
CP1	B-3
D1	B-2
D2	E-4
D3	E-4
D4	E-3
D5	E-3
E1	E-1S
E2	B-1S
F2	D-3
PS1	D-4
PS3	E-2
PS4	F-3
PS5	C-4
IC1	D-1
IC2	D-1
IC3	F-2
Q1	C-3
Q2	E-1
Q3	F-4
Q4	F-4
Q5	F-4
Q6	C-1
Q7	F-2
RV1	F-1
TP1	B-1S
TP2	F-1S
TP3	C-1S
TP4	F-1S
TP5	B-1S
TP6	F-1S
TP7	C-1S
TP8	E-1S

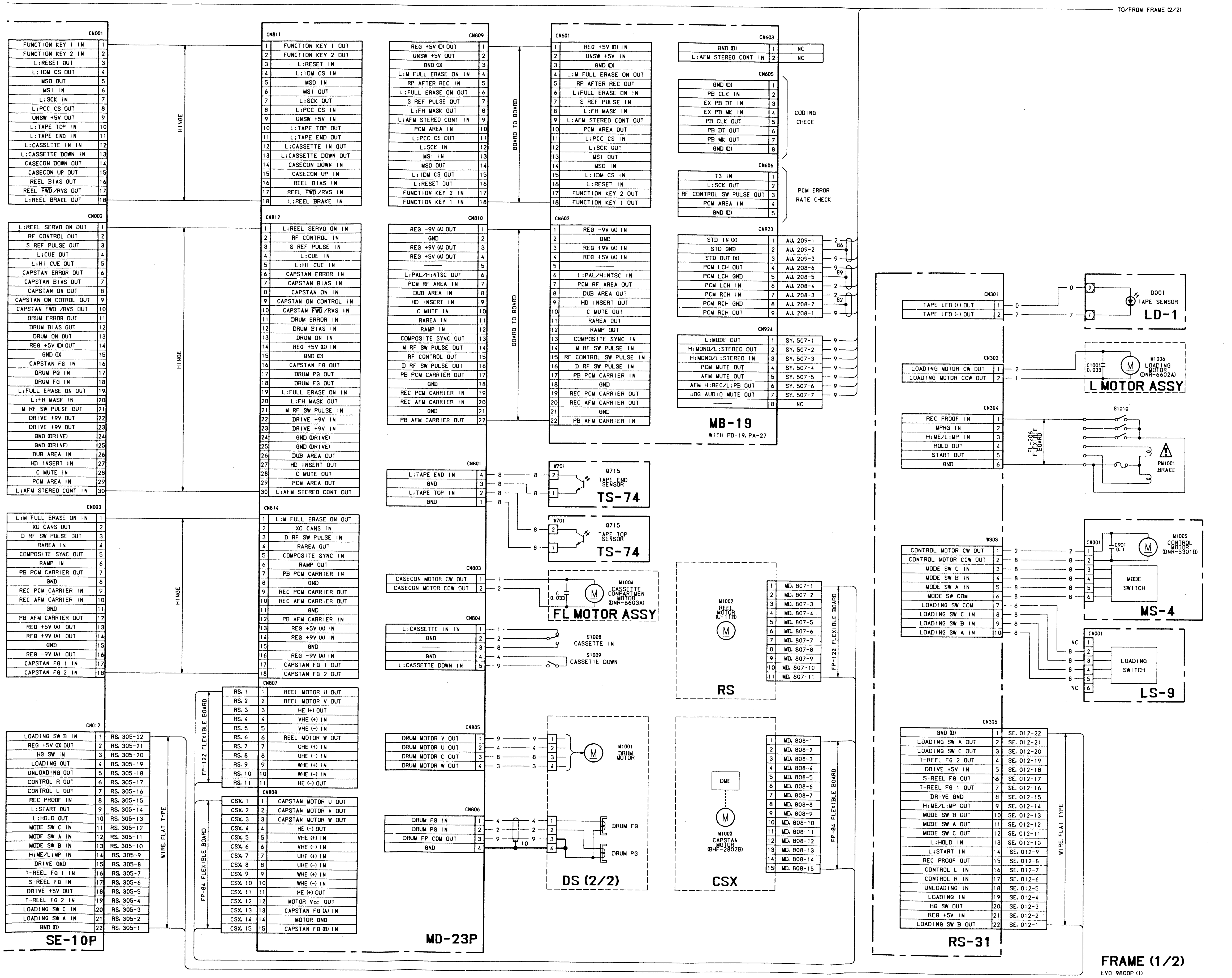
S: B SIDE (SOLDERING SIDE)


A
B
C
D
E
F
1
2
3
4
E1
E2
TP1
TP3
TP5
TP6
TP7
TP8
TP9
RV1
R14
R16
R18
R4
R7
R10
R13
R12
IC3
C23
D1
D5
CN2B
CN3
CN7W
CP1
250V 2.5A
BLK
GND
RED
BRW
GRY
DC-45A 1-631-800-21 SONY MADE IN JAPAN

DC-45A —A SIDE—
1-631-800-21(1)
EVO-9800P

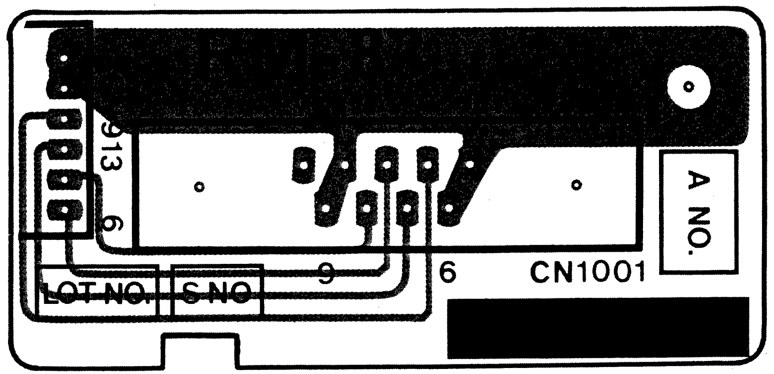
A Side is the same as COMPONENT Side


DS (1/2)
VIDEO HEAD CH-1 (SP)
VIDEO HEAD CH-2 (SP)
VIDEO HEAD CH-1 (LP)
VIDEO HEAD CH-2 (LP)
FLYING ERASE HEAD
FLEXIBLE 19P
CN001
CN002
CN003
CN004
CHECK PIN
WIRE FLAT TYPE
FR-43
WITH RP-103
RP-73 (LP)
CN011
CN901
CN902
CN903
CN904
CN905
CN906
CN907
HK-5
CN911
CN912
CN914
CN102
CN101
CN006
CN007
BOARD TO BOARD
IG-4
CN004
CN005
SE-10P
CN001
CN002
CN003
CN012
HINGE
FP-122 FLEXIBLE BOARD
FP-84 FLEXIBLE BOARD
A
B
C
D
E
F
G
H
I

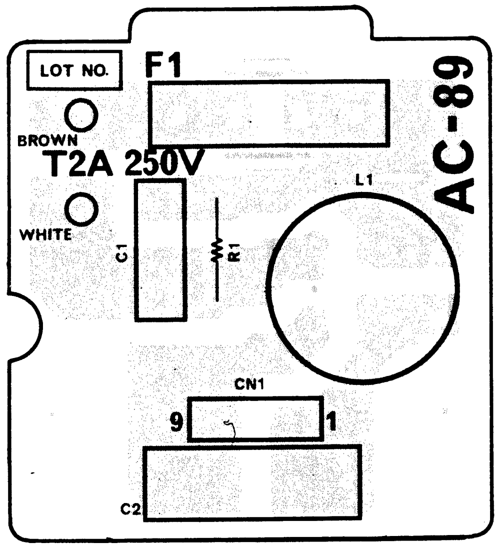

TO/FROM FRAME (2/2)
CN001
CN002
CN003
CN012
SE-10P
HINGE
WIRE. FLAT TYPE
CN811
CN812
CN814
CN807
CN808
CN809
CN810
CN801
CN803
CN804
CN805
CN806
BOARD TO BOARD
FP-122 FLEXIBLE BOARD
FP-84 FLEXIBLE BOARD
MD-23P
CN601
CN602
CN603
CN605
CN606
CN923
CN924
CODING CHECK
PCM ERROR RATE CHECK
MB-19
WITH PD-19, PA-27
Q715 TAPE END SENSOR
TS-74
Q715 TAPE TOP SENSOR
TS-74
M1004 CASSETTE COMPARTMEN MOTOR (DNR-6603A)
FL MOTOR ASSY
S1008 CASSETTE IN
S1009 CASSETTE DOWN
M1001 DRUM MOTOR
DRUM FG
DRUM PG
DS (2/2)
M1002 REEL MOTOR (U-11B)
RS
DME
M1003 CAPSTAN MOTOR (BHF-2802B)
CSX
CN301
CN302
CN304
CN303
CN305
D001 TAPE SENSOR
LD-1
M1006 LOADING MOTOR (DNR-6602A)
L MOTOR ASSY
S1010
FP-206 FLEXIBLE BOARD
PM1001 BRAKE
M1005 CONTROL MOTOR (DNR-5301B)
MODE SWITCH
MS-4
LOADING SWITCH
LS-9
RS-31
FRAME (1/2)
EVO-9800P (1)

NOTE:
The ⚠-marked components are critical to sefety.
Replace only with same components as specified.

RM-83; REMOTE CONNECTOR
AC-89; LINE FILTER


913
6
9
6
CN1001
A NO.
LOT NO.
S NO

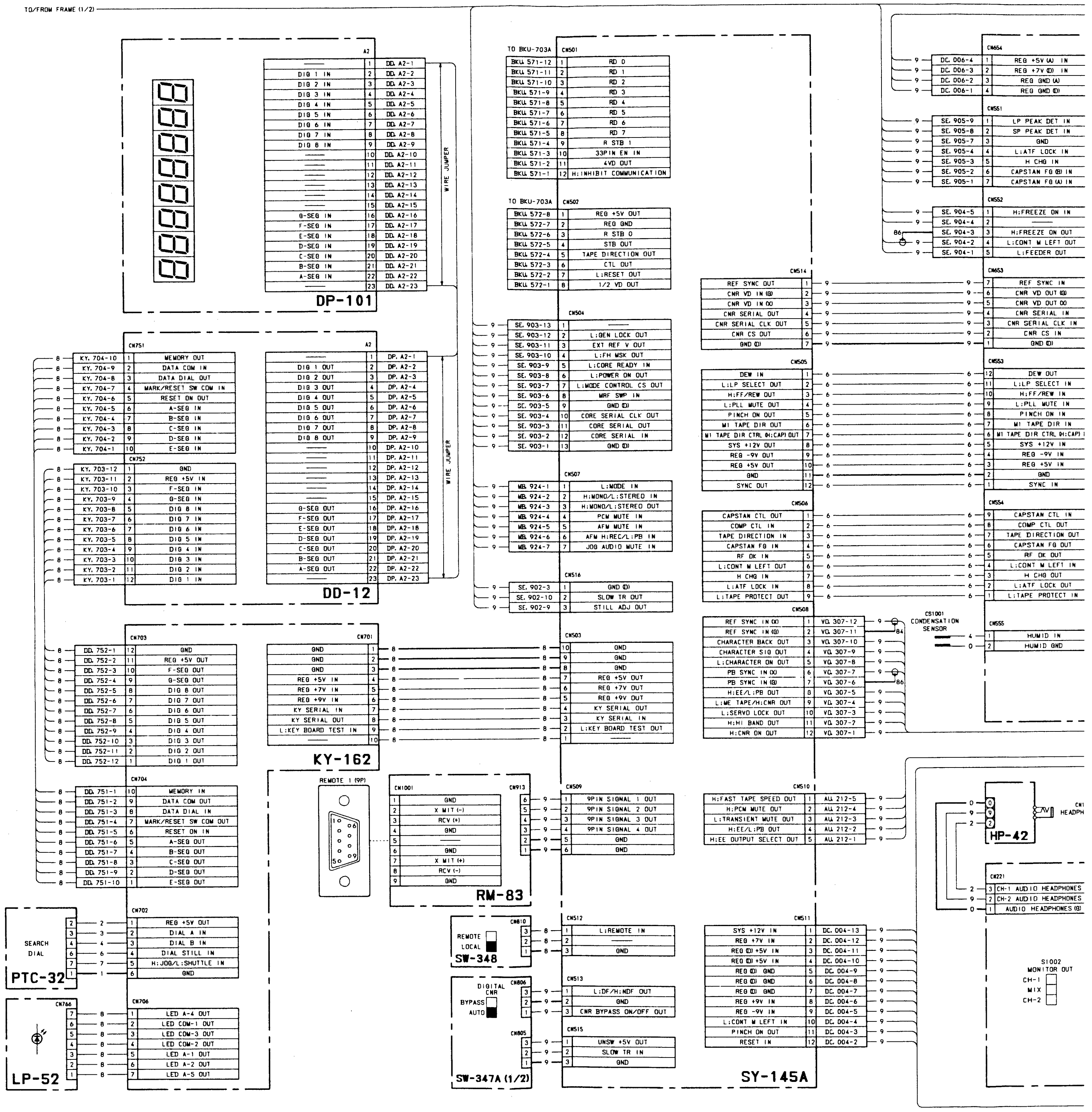
RM-83 —A SIDE—
1-635-086-11(1)
EVO-9800P


LOT NO.
F1
AC-89
BROWN
T2A 250V
WHITE
C1
R1
L1
CN1
9
1
C2

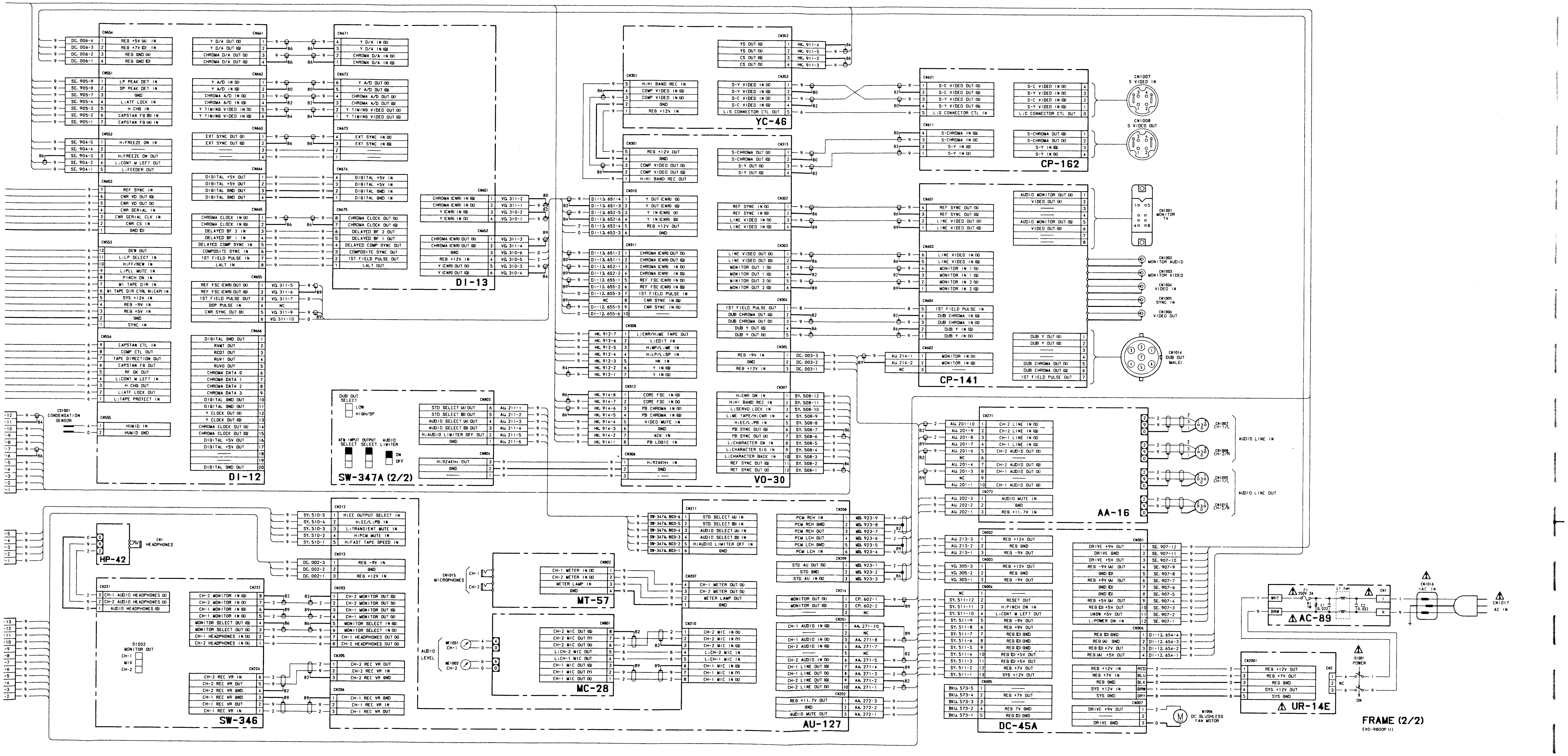
AC-89 —A SIDE—
1-622-786-12(1)
EVO-9800P

A Side is the same as COMPONENT Side

FRAME (2/2)


TO/FROM FRAME (1/2)
DP-101
DD-12
KY-162
TO BKU-703A
CN501
CN502
CN504
CN507
CN516
CN503
CN509
CN512
CN513
CN515
CN514
CN505
CN506
CN508
CN510
CN511
SY-145A
CN751
CN752
CN703
CN704
CN702
CN706
CN701
REMOTE 1 (9P)
CN1001
CN913
RM-83
SEARCH DIAL
PTC-32
LP-52
REMOTE
LOCAL
SW-348
DIGITAL CNR
BYPASS
AUTO
SW-347A (1/2)
CS1001 CONDENSATION SENSOR
HP-42
HEADPH
S1002 MONITOR OUT
CH-1
MIX
CH-2
WIRE JUMPER

FRAME (2/2), AC-89, RM-83


DI-12
DI-13
SW-347A (2/2)
YC-46
VO-30
CP-162
CP-141
AA-16
HP-42
SW-346
MT-57
MC-28
AU-127
DC-45A
AC-89
UR-14E
FRAME (2/2)
EVO-9800P (1)

NOTE:
The ⚠-marked components are critical to sefety.
Replace only with same components as specified.

13-63

SECTION 14
SPARE PARTS AND FIXTURE

14-1. PARTS INFORMATION

(1) The shaded and ⚠-marked components are critical to safety.
Replace only with same components as specified.

(2) Replacement Parts supplied from the Sony Parts Center will sometimes have a different shape from the original parts. This is due to **improved parts and/or engineering changes** or **standardization of genuine parts.**
This manual's exploded views and electrical spare parts list indicate the part numbers of **the standardized genuine parts at the present.** Regarding engineering part changes by the engineering department, refer to Sony service bulletins and service manual supplements.

(3) The parts marked with **s** in the SP column of the exploded views and electrical spare parts lists are normally stocked for replacement purposes. The parts marked with **o** in the SP column are not normally required for routine service work. Orders for parts marked with **o** will be processed, but allow for additional delivery time.

(4) Items with no part number and/or no description are not stocked because they are seldom required for routine service.

(5) (T) after a spring description is shown on the exploded views in order to indicate the number of spring turns required for the use.
.Example
Spring, tension (24T); This spring must be cut at its 24th turn for actual use.

(6) All capacitors are in micro farads unless otherwise specified.
All inductors are in micro henries unless otherwise specified.
All resistors are in ohms.

14-2. EXPLODED VIEWS

- Exploded views are composed of the following blocks.

(1) Reel Table Block
    Tension Regulator Arm
    T Reel Table
    S Reel Table
    S Soft Table

(2) Threading Ring and Tape Path Blocks
    Tape Guides
    Threading Motor
    Threading Ring
    T Main Brake
    S Main Brake
    Capstan Motor

(3) Head Drum and Threading Control Blocks
    Head Drum
    L Slider Assembly
    Tape Guides
    Pinch Press Lever
    L-switch Assembly

(4) Mechanism Control Block
    M-switch Assembly
    T.S Brake
    REW Brake
    S Hard Brake
    Control Motor

(5) Cassette-up Compartment Block (1)
    FL Motor (Cassette Loading)
    Tape TOP/END sensor

(6) Cassette-up Compartment Block (2)

(7) Printed Circuit Boads Block (Mechanical Deck)
    Printed Circuit Boards
    Reel Motor

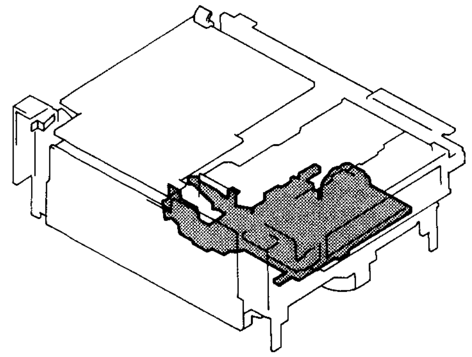
(8) Function Control Chassis Block
    Function Control Panel
    Search Dial

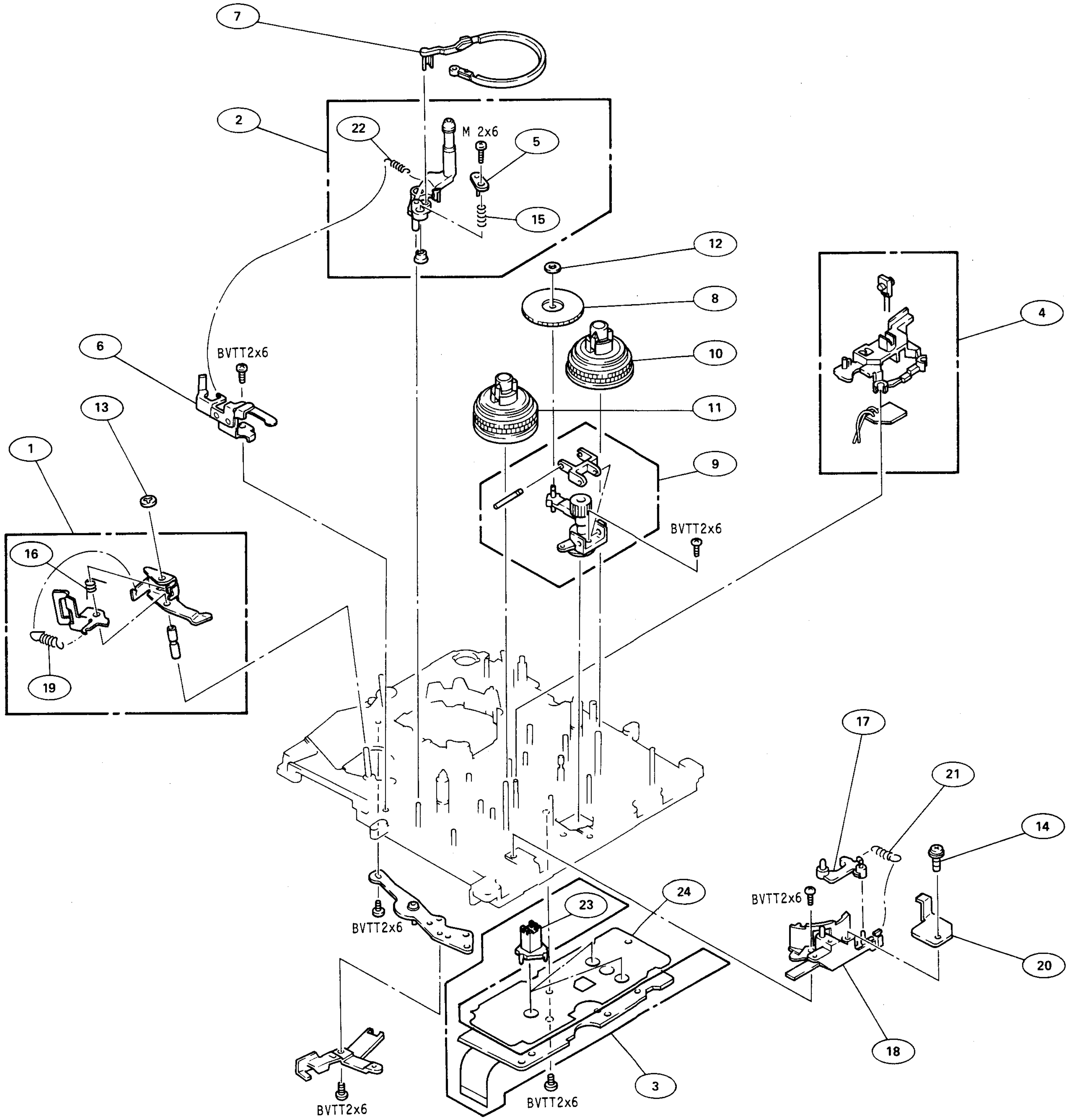
(9) Connector Panel Block
    Switching Regulator (UR-14)

(10) Printed Circuit Boards
    Power Switch

(11) Ornamental Panel Block
    Top Plate
    Front Panel
    Key Panel
    Side Plate
    Bottom Plate

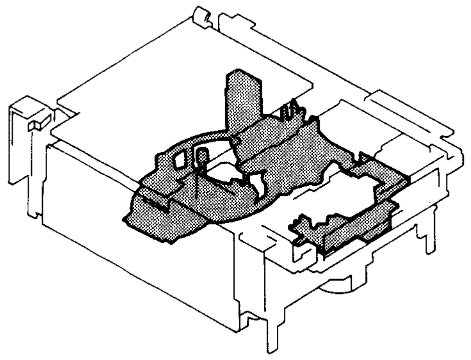
Reel Table Block

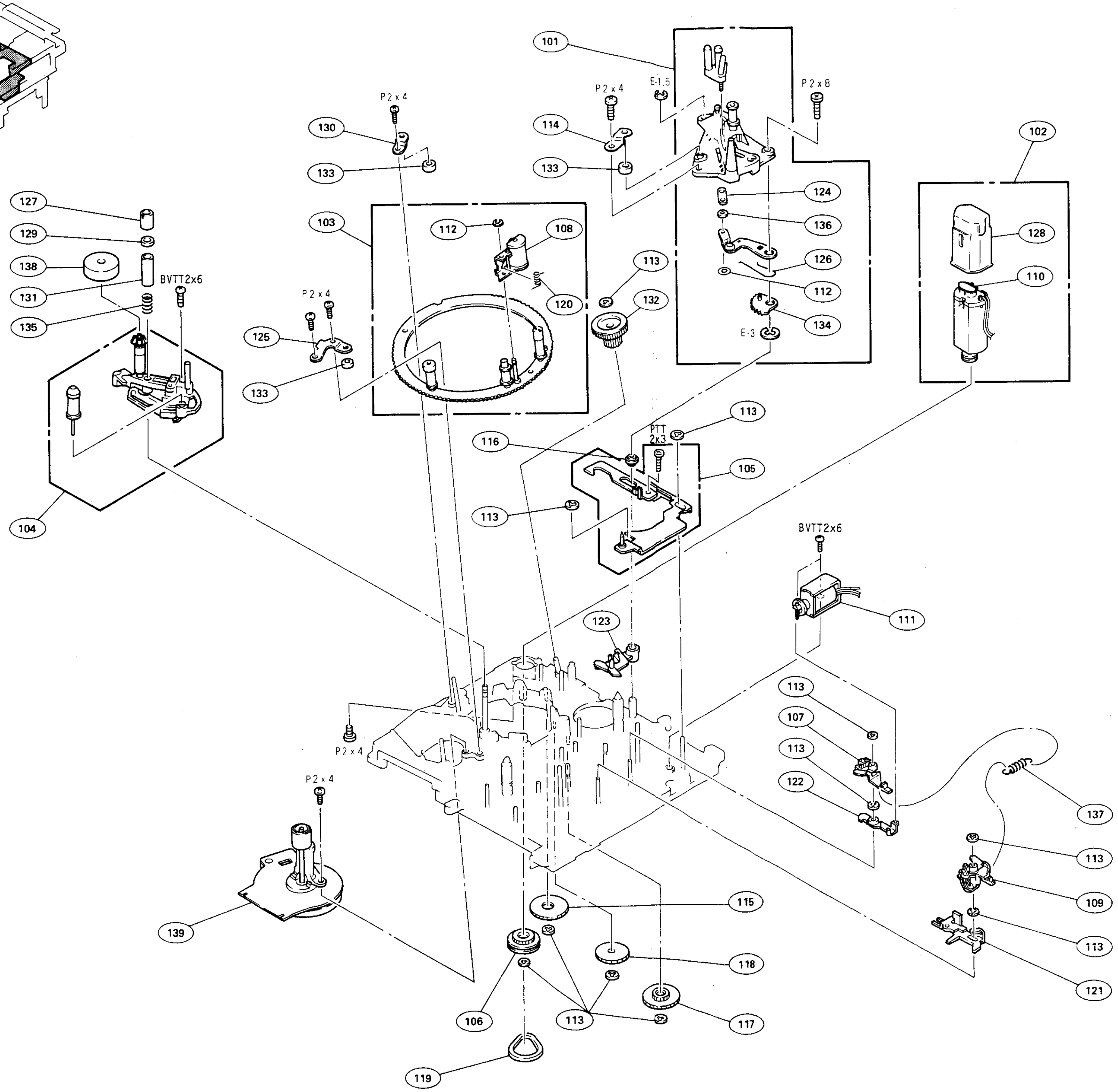



7
2
22
M 2x6
5
15
12
8
10
11
9
4
6
BVTT2x6
13
1
16
19
BVTT2x6
17
21
14
BVTT2x6
20
24
23
BVTT2x6
18
3
BVTT2x6
BVTT2x6

No.	Part No.	SP	Description
1	A-7040-008-A	s	ARM ASSY, PINCH PRESS
2	A-7040-071-A	s	ARM ASSY, TENSION REGULATOR
3	A-7061-818-A	o	MOUNTED CIRCUIT BOARD, RS-31
4	A-7070-024-A	o	MOUNTED CIRCUIT BOARD, LD-1
5	X-3686-523-1	o	PLATE ASSY, TENSION REGULATOR
6	X-3686-525-1	o	HOOK ASSY, SPRING
7	X-3686-531-1	s	BAND ASSY, TENSION REGULATOR
8	X-3686-763-1	s	GEAR (B) ASSY, DRIVING
9	X-3711-963-1	s	DRIVING COMPLETE ASSY
10	X-3711-998-1	s	TABLE ASSY, REEL, TAKE-UP
11	X-3713-427-1	s	TABLE ASSY, REEL, SUPPLY
12	3-315-384-31	s	WASHER, STOPPER
13	3-669-465-00	s	WASHER (1.5), STOPPER
14	3-669-480-11	s	+ PTPWH 2
15	3-669-666-00	s	SPRING, COMPRESSION
16	3-686-568-01	s	SPRING, TORSION
17	3-686-637-01	o	BRAKE (S), SOFT
18	3-686-760-01	o	GUIDE, BAND
19	3-686-885-01	s	SPRING, TENSION
20	3-686-991-01	o	STOPPER, REEL TABLE
21	3-714-014-01	s	SPRING, TENSION
22	3-699-519-01	s	SPRING, TENSION
23	3-712-410-01	s	HOLDER, RS
24	3-712-411-01	s	INSULATOR, RS

Threading Ring and Tape Path Blocks




101
P2x4
E-1.5
P2x8
102
P2x4
130
114
133
133
124
127
103
112
108
136
129
126
128
138
BVTT2x6
113
112
131
P2x4
120
132
110
135
134
E-3
125
133
113
PTT 2x3
116
105
104
113
BVTT2x6
123
111
113
107
P2x4
113
P2x4
122
137
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109
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121
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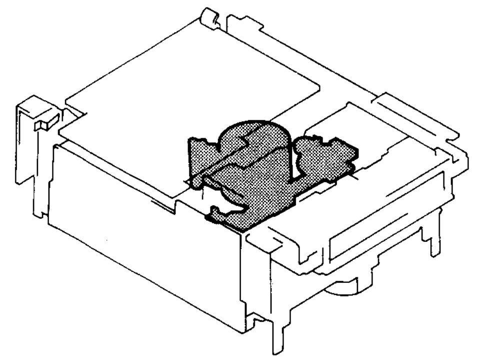
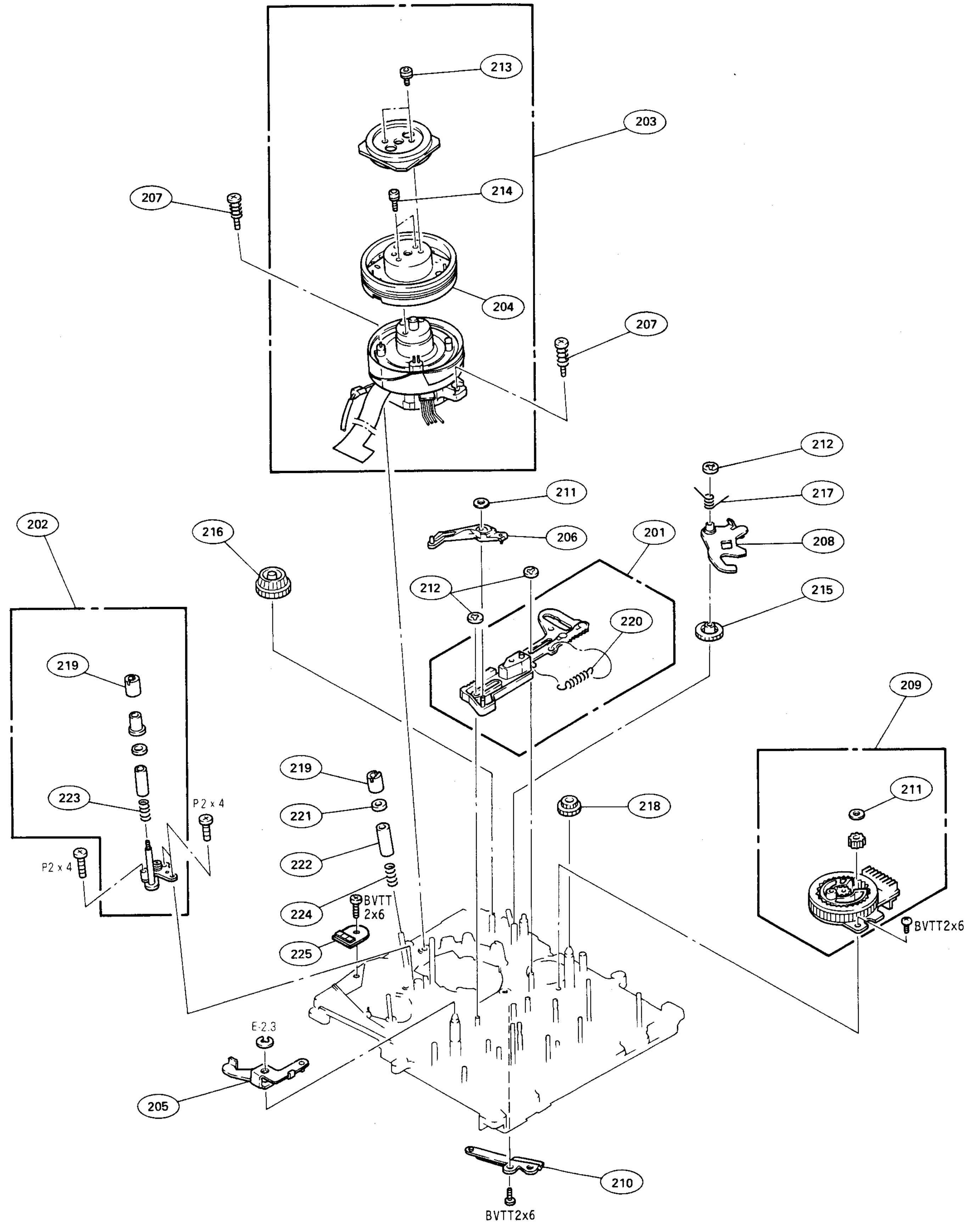
119

No.	Part No.	SP	Description
101	A-7040-001-A	s	GUIDE BLOCK ASSY, SLANT
102	A-7040-065-A	s	MOTOR ASSY, L (THREADING)
103	A-7040-123-A	s	RING ASSY, THREADING
104	A-7040-169-D	s	GUIDE (P) ASSY, ENTRANCE
105	A-7040-199-A	s	SLIDER (M) BLOCK ASSY, LOCK
106	X-3686-514-1	s	GEAR ASSY, NO.1
107	X-3686-574-1	s	BRAKE ASSY, MAIN, TAKE-UP
108	X-3686-648-1	s	ARM ASSY, PINCH ROLLER
109	X-3713-429-1	s	BRAKE ASSY, MAIN, S
110	1-161-057-00	s	CAP, CERAMIC 0,033MF X
111	⚠ . 1-454-377-31	s	SOLENOID, PLUNGER
112	3-315-384-31	s	WASHER, STOPPER
113	3-669-465-00	s	WASHER (1,5), STOPPER
114	3-686-503-01	o	RETAINER, ROLLER
115	3-686-508-01	s	GEAR, NO.2
116	3-686-537-01	s	RETAINER, LOCK SLIDER
117	3-686-544-01	s	GEAR, NO.4
118	3-686-545-01	s	GEAR, NO.3
119	3-686-546-01	s	BELT, L- MOTOR
120	3-726-704-01	s	SPRING, TORSION
121	3-686-629-01	o	SLIDER, SELECTION, UPPER & LOWER
122	3-686-635-01	o	ARM, P
123	3-686-636-04	o	ARM, T,S RELEASE
124	3-686-663-01	s	WASHER, STOPPER, 2 GANG
125	3-686-675-01	o	STOPPER, RING
126	3-686-701-01	s	SPRING
127	3-686-724-01	s	NUT, GUIDE
128	3-686-757-01	o	CAP, SHIELD, L MOTOR
129	3-686-894-01	o	FLANGE, #3 #4 GUIDE
130	3-686-911-01	o	PLATE, TOP, ROLLER
131	3-686-912-01	s	GUIDE, #3 #4
132	3-697-518-01	s	GEAR, NO.10
133	3-697-538-01	s	ROLLER, RING
134	3-699-509-01	s	GEAR, SECTOR
135	3-699-609-01	s	SPRING, COMPRESSION
136	3-701-436-21	s	WASHER, POLY 1,6MM DIA,. 0,5T
137	3-713-560-01	s	SPRING, TENSION
138	3-722-153-01	s	FLYWHEEL
139	8-835-364-01	s	MOTOR, DC (BHF-2802B)

Head Drum and Threading Control Blocks




213
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201
208
202
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212
215
220
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209
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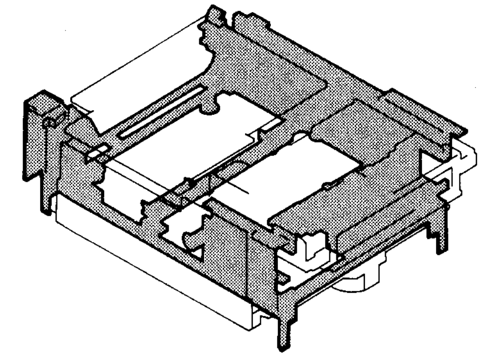
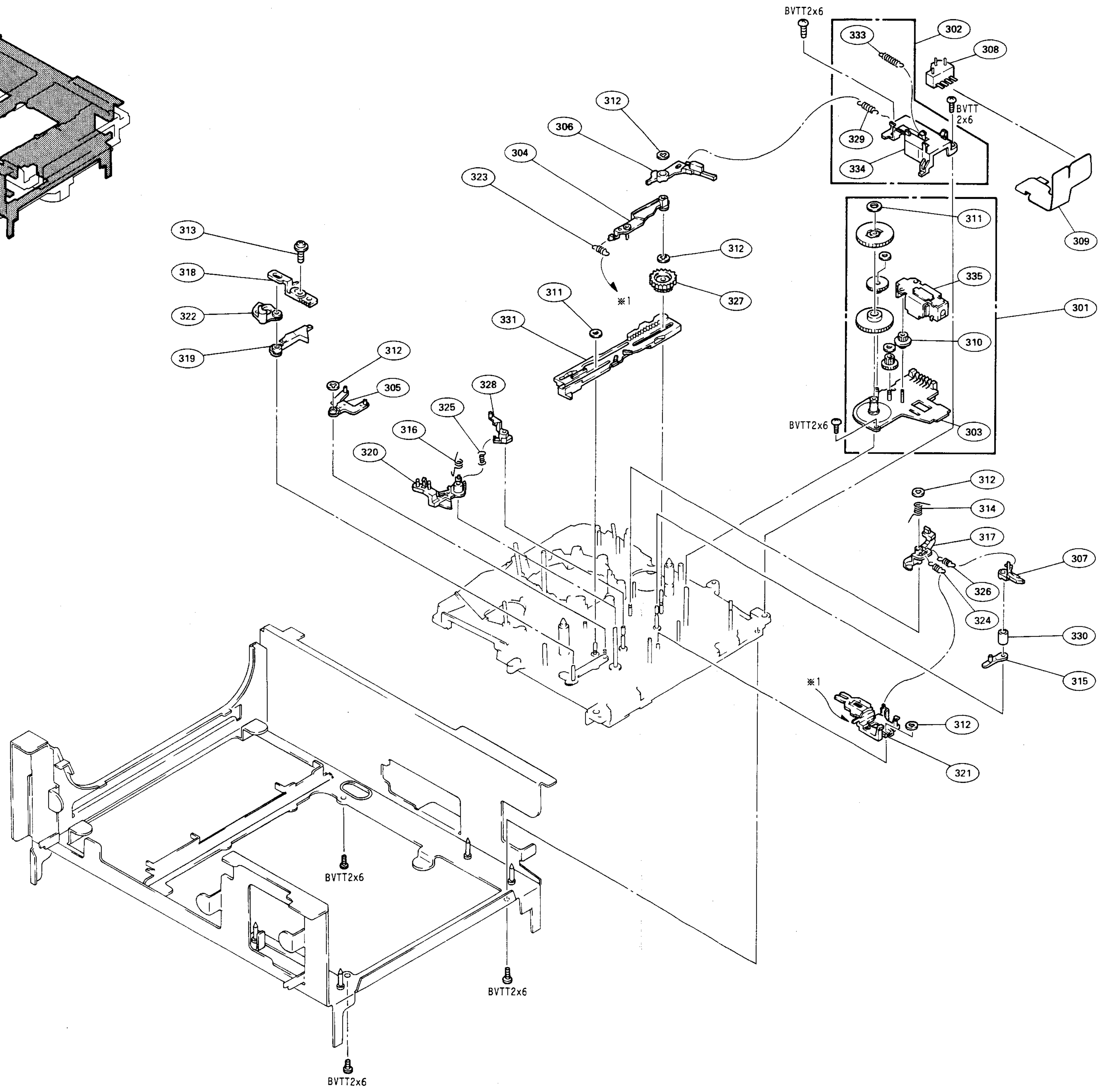
P2x4
P2x4
219
221
211
218
222
224
BVTT
2x6
225
BVTT2x6
E2.3
205
210
BVTT2x6

No.	Part No.	SP	Description
201	A-7040-010-A	o	SLIDER ASSY, L
202	A-7040-058-A	s	GUIDE BLOCK COMPLETE ASSY, #5
203	A-7048-389-A	s	DRUM ASSY (DGH-68A-R)
204	A-7049-328-A	s	DRUM ASSY, ROTARY (UPPER) (DGR-68-R)
205	X-3686-509-1	o	LEVER ASSY, PINCH PRESS
206	X-3686-518-3	o	ARM ASSY
207	X-3686-569-1	s	SCREW ASSY, FITTING
208	X-3686-579-1	s	CHANGE ASSY, DRIVE
209	X-3712-403-1	s	L-SW ASSY
210	1-535-535-11	s	TERMINAL, SHAFT GROUND
211	3-315-384-31	s	WASHER, STOPPER
212	3-669-465-00	s	WASHER (1.5), STOPPER
213	3-686-422-01	s	WASHER (2X2.7), BOLT, HOLE
214	3-686-493-01	s	SCREW (M2×5), P1
215	3-686-535-01	s	GEAR, NO.8
216	3-686-539-01	s	GEAR, NO.9
217	3-686-540-01	s	SPRING, TORSION
218	3-686-702-01	s	GEAR, DRIVING, GUIDE, SLANT
219	3-686-724-01	s	NUT, GUIDE
220	3-686-886-01	s	SPRING, TENSION
221	3-686-894-01	o	FLANGE, #3 #4 GUIDE
222	3-686-912-01	s	GUIDE, #3 #4
223	3-699-514-01	s	SPRING, COMPRESSION
224	3-699-609-01	s	SPRING, COMPRESSION
225	1-808-506-12	s	SENSOR, DEW CONDENSATION

Mechanism Control Block




BVTT2x6
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302
308
BVTT
2x6
329
334
312
306
304
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311
335
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313
312
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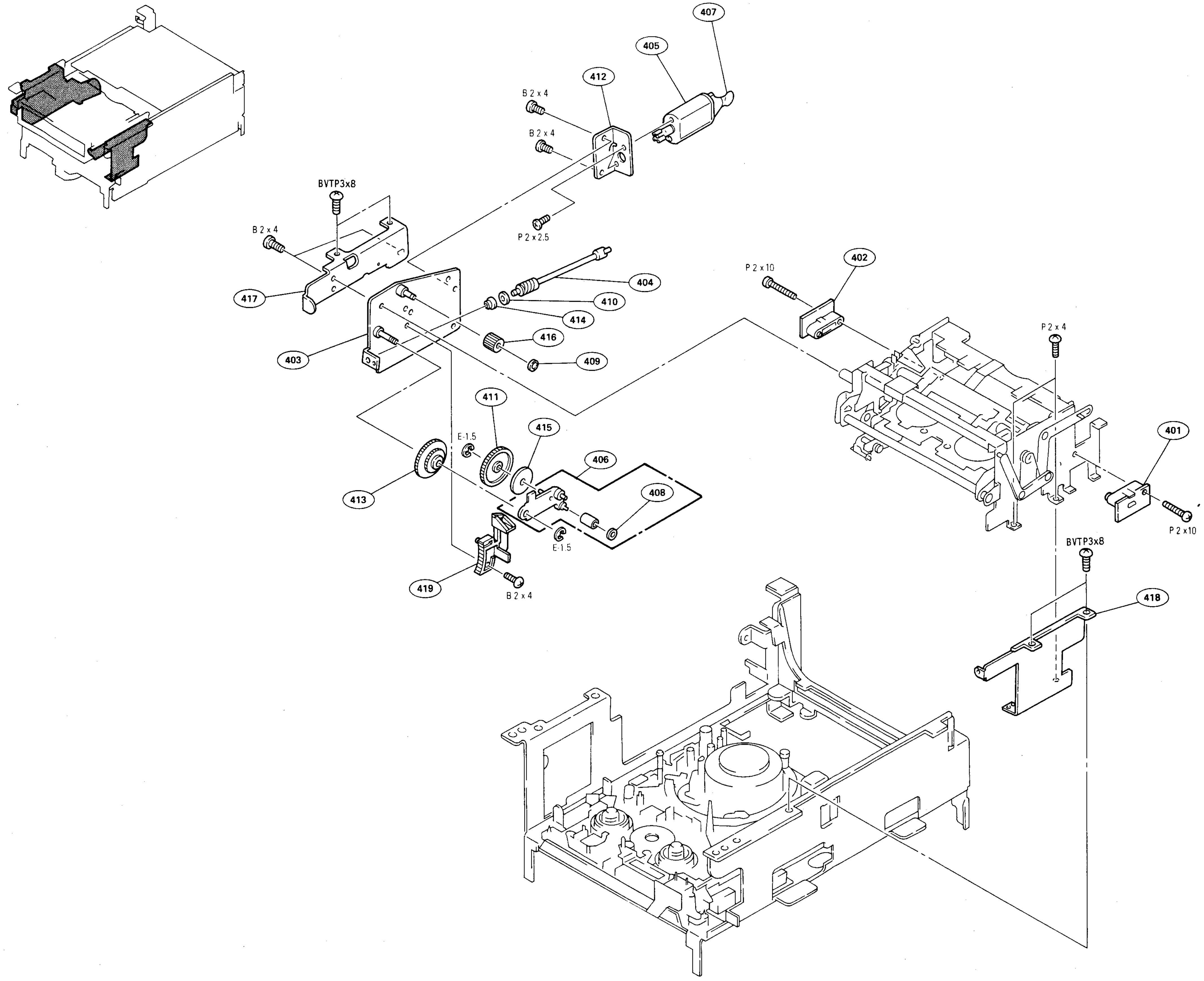
301
322
※1
311
331
319
310
312
305
328
325
BVTT2x6
303
316
320
312
314
317
307
326
324
330
315
※1
312
321
BVTT2x6
BVTT2x6
BVTT2x6

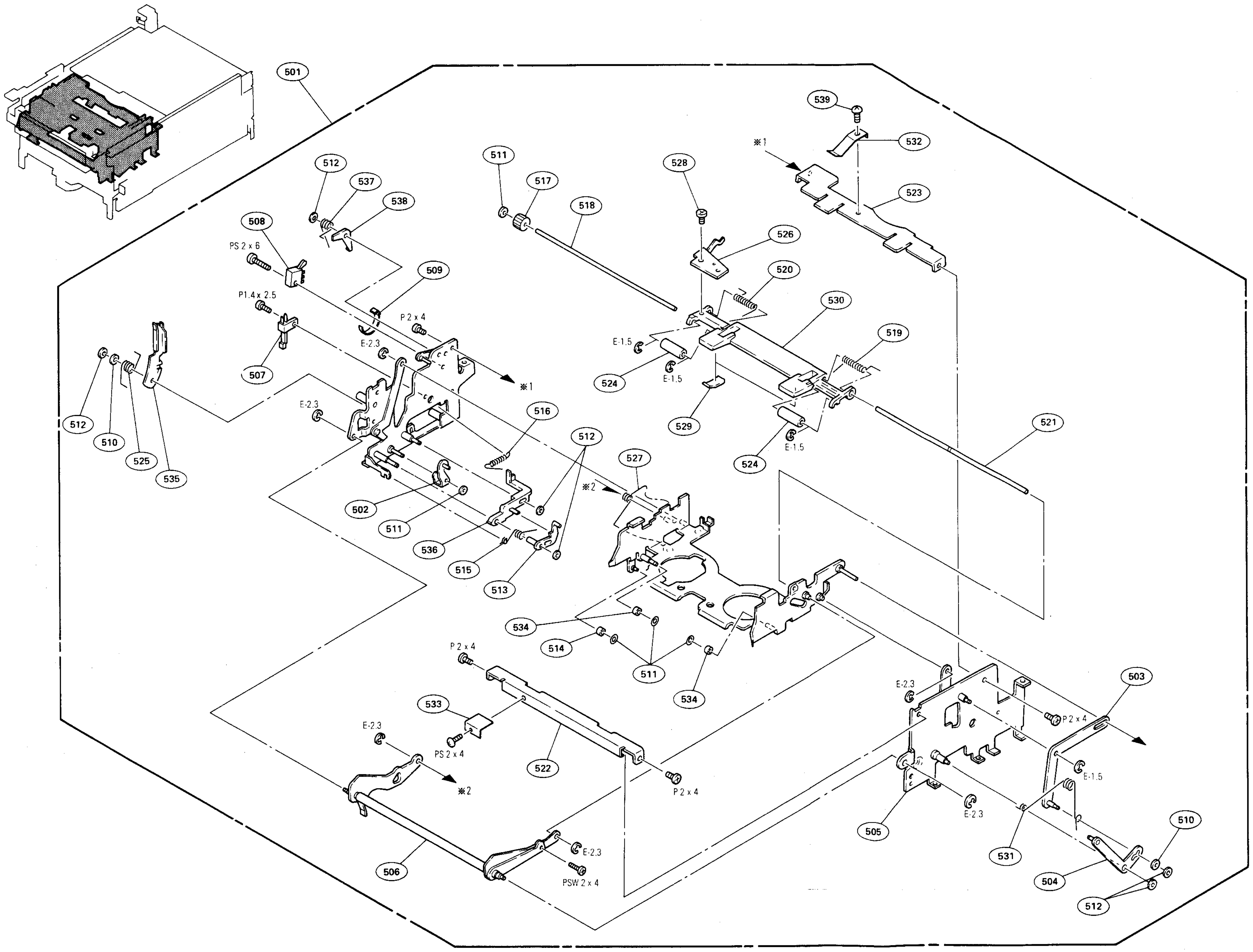
No.	Part No.	SP	Description
301	A-7040-159-A	s	M-SW ASSY
302	A-7040-198-A	s	COVER (M) ASSY, C MOTOR
303	A-7090-029-A	s	MOUNTED CIRCUIT BOARD, MS-4
304	X-3686-528-4	o	ARM ASSY, B RELEASE
305	X-3686-530-1	o	ARM (A) ASSY, SELECTION
306	X-3711-987-2	s	BRAKE ASSY, T.S
307	X-3711-993-1	s	BRAKE ASSY, REW
308	1-572-298-21	s	SWITCH, PUSH
309	1-630-923-11	o	FP-206 FLEXIBLE BOARD
310	3-308-502-00	s	WHEEL, WORM
311	3-315-384-31	s	WASHER, STOPPER
312	3-669-465-00	s	WASHER (1.5), STOPPER
313	3-686-528-01	s	SCREW (2X6), +
314	3-686-579-01	s	SPRING
315	3-686-580-01	o	ARM, SET UP
316	3-686-603-04	s	SPRING
317	3-686-634-01	o	ARM, RL
318	3-686-642-01	o	PLATE, ADJSUTMENT, BAND
319	3-686-643-01	o	ARM, MODE
320	3-686-644-01	o	ARM, BAND
321	3-686-656-01	o	SLIDER, B RELEASE
322	3-686-755-01	o	DISK, EJECT
323	3-686-903-01	s	SPRING, TENSION
324	3-686-904-01	s	SPRING, TENSION
325	3-686-905-02	s	SPRING, TENSION
326	3-686-906-01	s	SPRING, TENSION
327	3-686-909-01	s	GEAR, MODE OUTPUT
328	3-686-996-01	s	BRAKE (S), HARD
329	3-714-035-01	s	SPRING, TENSION
330	3-716-933-01	s	SPACER, REW BRAKE
331	3-716-935-01	s	SLIDER, M
333	3-722-110-01	s	SPRING, TENSION
334	3-739-107-01	s	COVER (M), C MOTOR
335	8-835-138-01	s	MOTOR, DC (DNR-5301B) (CONTROL)

Cassette Up Compartment Block (1)


407
405
412
B 2 x 4
B 2 x 4
BVTP3x8
B 2 x 4
P 2 x 2.5
417
404
410
414
416
403
409
P 2 x 10
402
P 2 x 4
411
415
406
408
401
E-1.5
413
E-1.5
419
B 2 x 4
BVTP3x8
P 2 x10
418

No.	Part No.	SP	Description
401	A-7070-627-A	o	MOUNTED CIRCUIT BOARD, TS-74 (RIGHT)
402	A-7070-628-A	o	MOUNTED CIRCUIT BOARD, TS-74 (LEFT)
403	X-3711-934-1	o	PLATE SUB ASSY, BLOCK
404	X-3711-935-3	s	SHAFT ASSY, WORM
405	X-3711-936-1	s	MOTOR ASSY, FL (CASSETTE LOADING)
406	X-3714-193-1	s	LEVER ASSY (B), GEAR
407	1-161-057-00	s	CAP, CERAMIC 0.033MF X
408	3-315-414-31	s	WASHER
409	3-669-465-00	s	WASHER (1.5), STOPPER
410	3-701-437-11	s	WASHER, POLY 2MM DIA., 0.25T
411	3-713-430-01	s	GEAR (B)
412	3-713-431-01	o	BRACKET, MOTOR
413	3-713-433-01	s	GEAR (A)
414	3-713-439-01	s	BEARING
415	3-713-441-01	o	SPRING, LEAF
416	3-713-452-01	s	GEAR (C)
417	3-724-140-01	o	BRACKET (LEFT)
418	3-724-141-01	o	BRACKET (RIGHT)
419	3-724-913-02	s	RACK

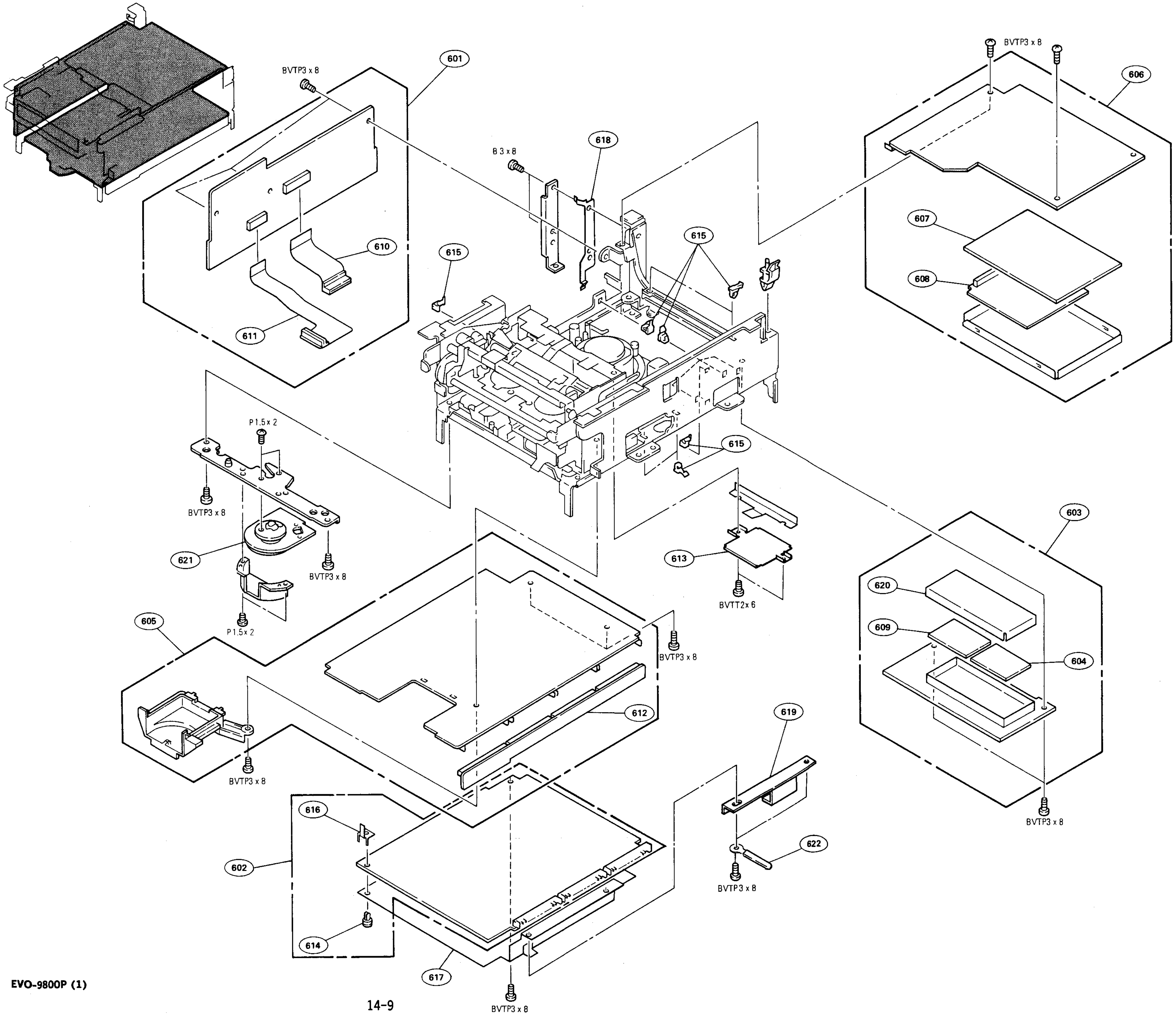
Cassette Up Compartment Block (2)


501
539
532
※1
523
511
528
517
518
512
537
538
508
PS 2 x 6
526
520
530
509
P1.4 x 2.5
P 2 x 4
E-2.3
E-1.5
※1
507
519
524
E-1.5
E-2.3
529
516
512
527
521
524
E-1.5
512
510
525
535
※2
502
511
536
515
513
534
514
511
534
P 2 x 4
533
E-2.3
PS 2 x 4
522
※2
P 2 x 4
E-2.3
P 2 x 4
503
E-1.5
505
E-2.3
531
510
504
512
E-2.3
PSW 2 x 4
506

No.	Part No.	SP	Description
501	A-7090-645-A	s	CASSETTE COMPARTMENT BLOCK ASSY
502	X-3686-541-1	o	CLAW ASSY, LOCK
503	X-3711-930-1	s	LEVER ASSY, HOLDER
504	X-3711-931-4	s	LEVER ASSY, DOOR
505	X-3711-932-1	o	PLATE (R) ASSY, SIDE
506	X-3711-937-1	o	JOINT ASSY
507	1-553-226-00	s	SWITCH, LEAF (CASSETTE LOCK)
508	1-570-407-11	s	SWITCH, SLIDE (CASSETTE LOADING)
509	3-337-402-01	o	BAND, BINDING
510	3-533-073-01	s	WASHER
511	3-578-265-11	s	WASHER, STOPPER
512	3-669-465-00	s	WASHER (1.5), STOPPER
513	3-686-692-01	s	PREVENTION, SLIDER
514	3-686-693-01	o	ROLLER, LOCK
515	3-686-694-01	s	SPRING, TORTION
516	3-696-047-01	s	SPRING, TENSION
517	3-713-429-01	s	GEAR (D)
518	3-713-440-01	o	SHAFT, ROLLER
519	3-713-442-01	s	SPRING (RIGHT)
520	3-713-445-01	s	SPRING (LEFT)
521	3-713-457-01	o	SHAFT, JOINT
522	3-713-458-01	o	REINFORCEMENT
523	3-713-462-03	o	STOPPER, HOLDER
524	3-713-466-01	s	ROLLER
525	3-713-488-01	s	SPRING (2), TORSION
526	3-724-912-01	s	PLATE, FUNCTION, LEVER
527	3-713-620-01	s	SPRING (1), TORSION
528	3-713-622-01	s	SCREW (M1.3X4), TAPPING, 0
529	3-713-625-01	s	SHOE, BRAKE
530	3-713-626-01	s	COVER, MULTI
531	3-713-628-01	s	SPRING, TORTION
532	3-713-658-01	s	SPRING
533	3-716-921-01	s	SPRING. LEAF
534	3-719-590-01	s	ROLLER, ASSIST
535	3-721-125-01	s	LEVER, LOCK
536	3-721-136-01	s	SLIDER, LOCK
537	3-721-163-01	s	SPRING
538	3-721-166-01	s	LEVER, SWITCH
539	3-739-116-01	s	SCREW (2×3), +PS

PRINTED CIRCUIT BOARDS BLOCK (MECHANICAL DECK)

Printed Circuit Boards Block (Mechanical Deck)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B 3 x 8
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BVTP3 x 8
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610
615
615
607
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611
P 1.5 x 2
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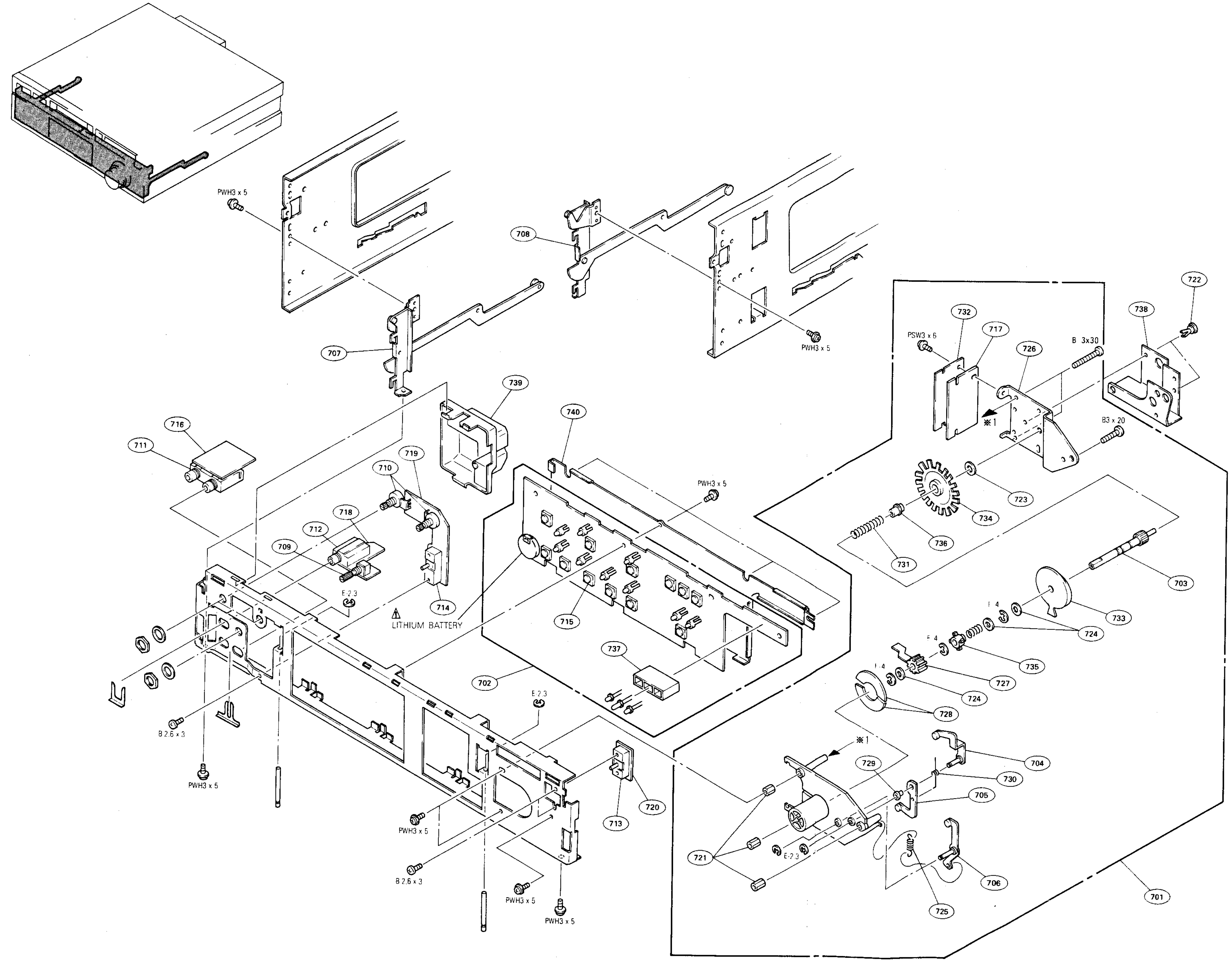
BVTP3 x 8
621
BVTP3 x 8
613
BVTT2 x 6
603
620
605
P 1.5 x 2
BVTP3 x 8
609
604
612
619
BVTP3 x 8
616
622
602
BVTP3 x 8
BVTP3 x 8
614
617
BVTP3 x 8

No.	Part No.	SP	Description
601	A-7062-168-A	o	MOUNTED CIRCUIT BOARD, MD-23 (P)
602	A-7062-164-A	o	MOUNTED CIRCUIT BOARD, HK-5
603	A-7062-165-A	o	MOUNTED CIRCUIT BOARD, FR-43
604	A-7062-166-A	o	MOUNTED CIRCUIT BOARD, RP-103
605	A-7062-167-A	o	MOUNTED CIRCUIT BOARD, SE-10 (P)
606	A-7061-824-A	o	MOUNTED CIRCUIT BOARD, MB-19
607	A-7061-825-A	o	MOUNTED CIRCUIT BOARD, PD-19
608	A-7061-826-A	s	MOUNTED CIRCUIT BOARD, PA-27
609	A-7061-827-A	o	MOUNTED CIRCUIT BOARD, RP-73 (LP)
610	A-7070-624-A	o	FP-84 FLEXIBLE BOARD
611	A-7070-625-A	o	FP-122 FLEXIBLE BOARD
612	A-7070-955-A	o	MOUNTED CIRCUIT BOARD, IG-4
613	X-3691-922-1	o	COVER ASSY, FLEXIBLE
614	3-531-576-01	s	RIVET
615	3-671-150-11	o	CLAMP
616	3-724-107-01	o	RETAINER, PC BOARD
617	3-724-175-01	o	PLATE, SHIELD, CORE
618	3-724-199-01	o	PLATE, SUPPORT, MB
619	3-738-954-01	o	STOPPER, HK
620	3-739-102-01	o	LID (H), UPPER, FR SHIELD CASE
621	8-835-304-11	s	MOTOR, DC (U-11B) (REEL MOTOR)
622	3-701-822-00	o	HOLDER, WIRE

Function Control Chassis Block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707
739
740
716
711
719
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712
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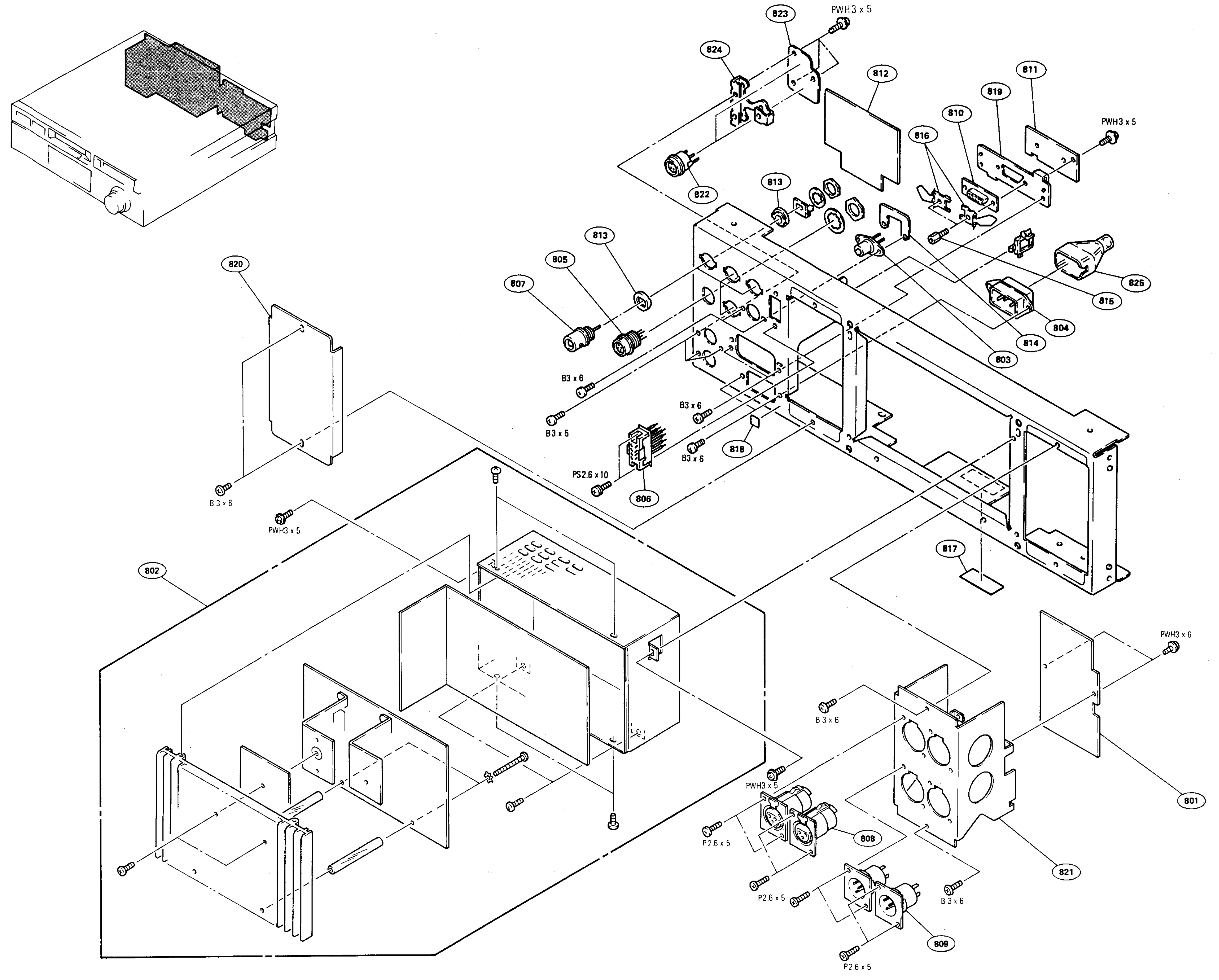
E 2.3
LITHIUM BATTERY
714
715
737
702
B 2.6 x 3
PWH3 x 5
713
720
732
717
726
PSW3 x 6
B 3x30
738
722
B3 x 20
※1
723
734
736
731
703
733
724
735
727
728
※1
729
704
730
705
721
E 2.3
706
725
701
E 4

No.	Part No.	SP	Description
701	A-6734-238-C	s	DIAL BLOCK ASSY, SERCH
702	A-7061-779-A	o	MOUNTED CIRCUIT BOARD, KY-162
703	X-3717-226-1	o	SHAFT SUB ASSY, MAIN
704	X-3717-227-1	o	ARM (RIGHT) ASSY, S10
705	X-3717-228-1	o	ARM (LEFT) ASSY, S10
706	X-3717-229-1	o	ARM ASSY, RETURN
707	X-3738-903-1	o	HINGE (LEFT) ASSY
708	X-3738-904-1	o	HINGE (RIGHT) ASSY
709	1-237-703-11	s	RES, VAR, CARBON 2K/2K
710	1-238-483-11	s	RES, VAR, CARBON 5K
711	1-507-797-21	s	JACK, LARGE TYPE 2P
712	1-507-854-00	s	JACK, LARGE TYPE
713	1-516-961-00	s	SWITCH, LEVER SLIDE
714	1-516-963-00	s	SWITCH, LEVER SLIDE
715	1-552-539-00	s	SWITCH, KEY BOARD
716	1-622-222-11	o	PRINTED CIRCUIT BOARD, MC-28
717	1-622-638-11	o	PRINTED CIRCUIT BOARD, PTC-32
718	1-629-477-11	o	PRINTED CIRCUIT BOARD, HP-42
719	1-631-793-11	o	PRINTED CIRCUIT BOARD, SW-346
720	1-631-795-11	o	PRINTED CIRCUIT BOARD, SW-348
721	2-280-622-11	o	SUPPORT (M3), HEXAGON
722	3-531-576-01	s	RIVET
723	3-662-048-00	s	WASHER, BRACKET
724	3-701-443-21	s	WASHER, POLY 5MM DIA., 0.50T
725	3-701-788-XX	s	SPRING, TENSION (15T)
726	3-717-315-01	o	PLATE, BOTTOM, SD
727	3-717-316-03	o	GUIDE. LOCK IN
728	3-717-317-01	o	PLATE, CLUTCH
729	3-717-318-01	o	BEARING, S10
730	3-717-319-01	o	SPRING, TORSION
731	3-717-320-01	o	SPRING, COMPRESSION
732	3-717-321-01	o	PROTECTOR, PTC
733	3-717-417-01	o	CAM
734	3-717-418-01	o	PLATE
735	3-717-546-02	o	GUIDE, LOCK OUT
736	3-717-553-01	o	BEARING, SD
737	3-718-657-01	o	HOLDER, LED
738	3-718-771-01	o	COVER (U), SD
739	3-738-914-01	o	PROTECTOR, MH
740	3-738-933-01	o	PROTECTOR, KY

Connector Panel Block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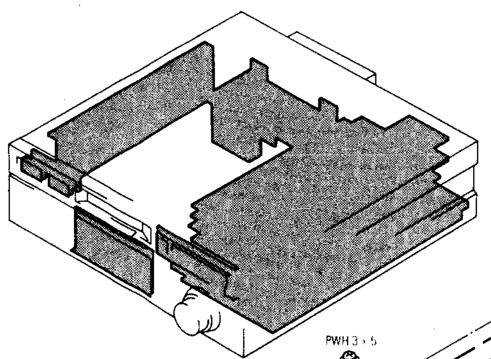
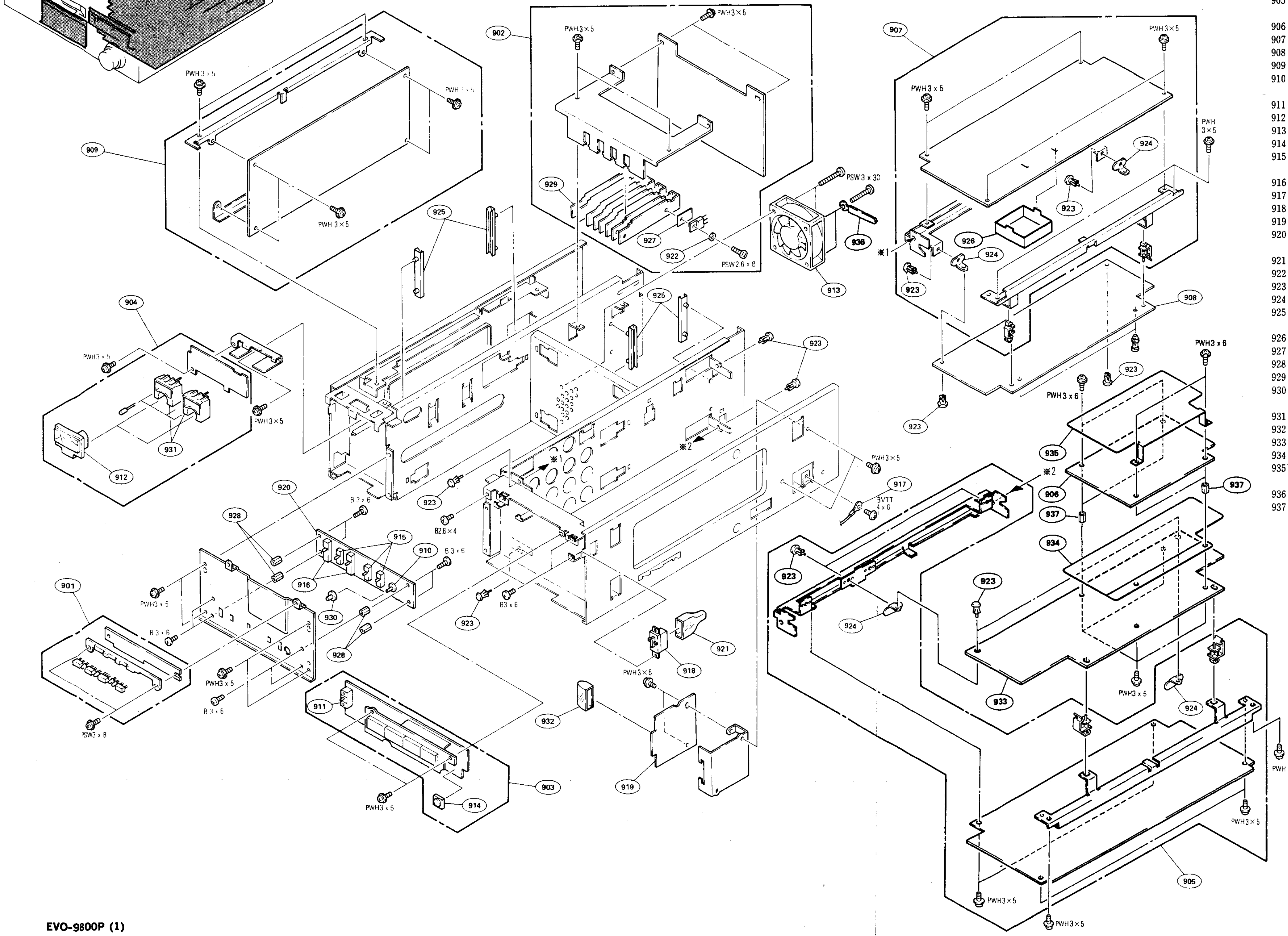
820
B3 x 6
B3 x 5
B3 x 6
B3 x 6
818
PS2.6 x 10
806
825
815
804
814
803
B 3 x 6
PWH3 x 5
802
817
PWH3 x 6
B 3 x 6
801
PWH3 x 5
P2.6 x 5
808
821
P2.6 x 5
B 3 x 6
809
P2.6 x 5

No.	Part No.	SP	Description
801	A-6713-363-A	o	MOUNTED CIRCUIT BOARD, AA-16
802	⚠.1-413-249-12	o	SWITCHING REGULATOR (UR-14E)
803	1-507-467-00	s	1P PIN JACK
804	⚠.1-560-222-11	s	INLET 3P
805	1-561-045-21	s	CONNECTOR, (R-F)
806	1-561-577-21	s	CONNECTOR (DIP TYPE) 8P
807	1-562-227-21	o	RECEPTACLE, BNC
808	1-563-029-21	s	CONNECTOR (RECEPTACLE) 3P
809	1-563-030-21	s	CONNECTOR (RECEPTACLE) 3P
810	1-563-890-21	s	SOCKET, D-SUB CONNECTOR 9P
811	1-635-086-11	o	PRINTED CIRCUIT BOARD, RM-83
812	1-631-807-11	o	PRINTED CIRCUIT BOARD, CP-141
813	3-654-545-00	s	SPACER, BNC
814	3-661-147-00	o	NUT, PLATE
815	3-668-459-11	o	SCREW, CONNECTOR
816	3-668-460-00	o	SPRING
817	3-703-043-31	o	LABEL, MAIN CAUTION
818	3-703-082-21	s	LABEL, CAUTION
819	3-738-955-01	o	BRACKET (P), 9P
820	3-733-627-01	o	COVER, IF
821	3-733-641-01	o	BRACKET, XLR
822	1-566-850-31	s	CONNECTOR, (S) TERMINAL 4P
823	1-635-085-11	o	PRINTED CIRCUIT BOARD, CP-162
824	3-738-958-01	o	BRACKET, S
825	4-601-466-11	s	COVER, 3P INLET

Printed Circuit Boards

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PWH 3×5
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925
927
922
PSW2.6×8
PSW3×30
936
913
924
923
926
924
※1
923
908
904
PWH3×5
PWH3×5
925
923
923
PWH3×6
PWH3×6
923
931
912
※1
※2
PWH3×5
917
BVTT 4×6
935
※2
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937
934
920
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B3×6
923
B2.6×4
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B3×6
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PWH3×5
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B3×6
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B3×6
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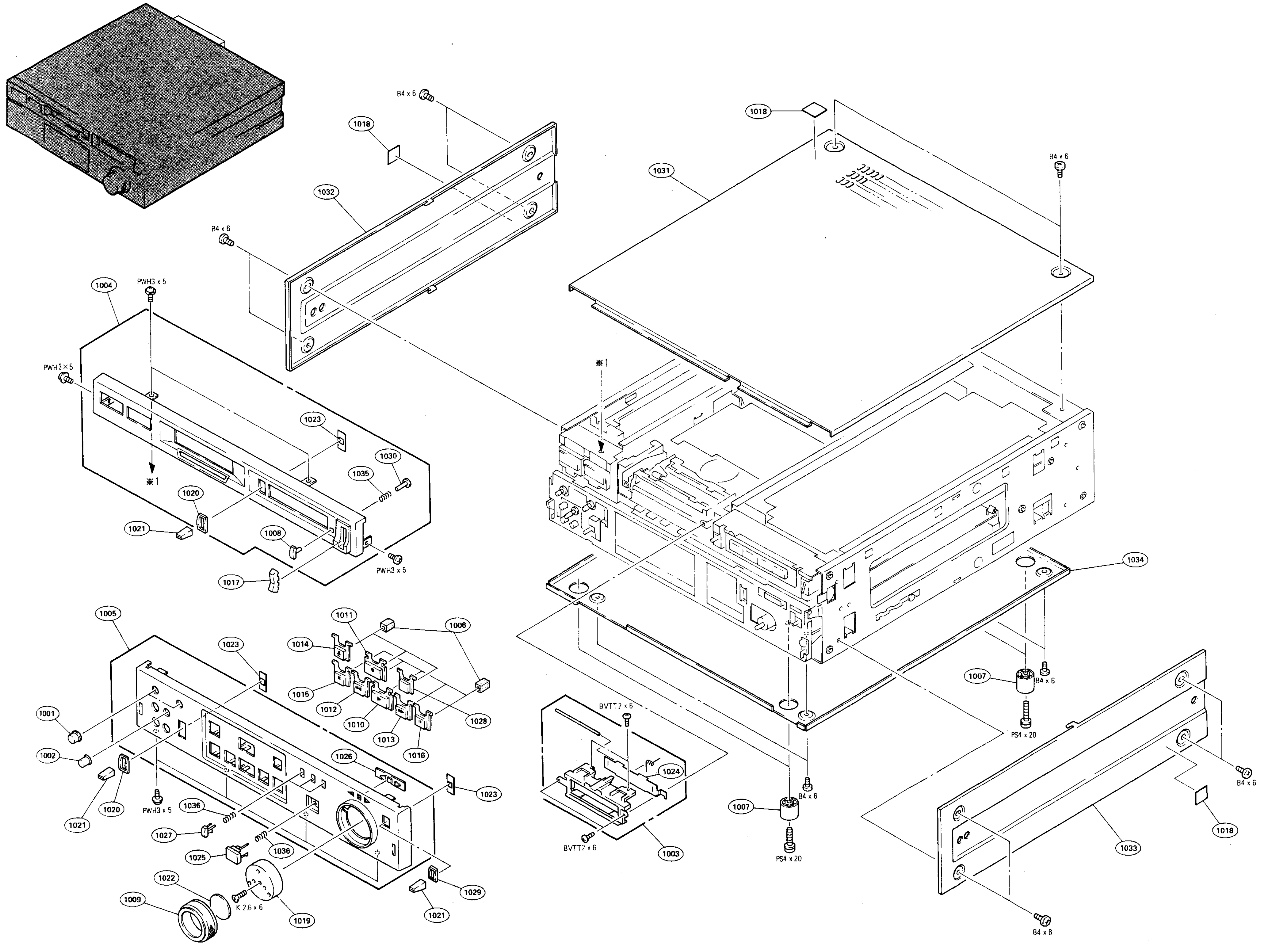
911
932
919
903
PWH3×5
914
PWH3×5
PWH3×5
905
PWH3×5
PWH3×5

No.	Part No.	SP	Description
901	A-7061-770-A	o	MOUNTED CIRCUIT BOARD, LP-52
902	A-7062-150-A	o	MOUNTED CIRCUIT BOARD, DC-45A
903	A-7061-772-A	o	MOUNTED CIRCUIT BOARD, DD-12
904	A-7061-773-A	o	MOUNTED CIRCUIT BOARD, MT-57
905	A-7062-151-A	o	MOUNTED CIRCUIT BOARD, SY-145A
906	A-7062-155-A	o	MOUNTED CIRCUIT BOARD, DI-13
907	A-7062-152-A	o	MOUNTED CIRCUIT BOARD, VO-30
908	A-7062-153-A	o	MOUNTED CIRCUIT BOARD, YC-46
909	A-7061-778-A	o	MOUNTED CIRCUIT BOARD, AU-127
910	1-230-122-00	s	RES, VAR, CARBON 100K
911	1-516-995-00	s	SWITCH, LEVER SLIDE
912	1-520-506-11	s	METER, AUDIO LEVEL
913	1-541-360-21	s	MOTOR, DC BLUSHLESS FAN
914	1-552-539-00	s	SWITCH, KEY BOARD
915	1-554-481-00	s	SWITCH, SLIDE
916	1-571-908-11	s	SWITCH, SLIDE
917	1-555-724-00	o	WIRE, GROUND
918	⚠. 1-570-117-41	s	POWER, SW
919	1-622-786-11	o	PRINTED CIRCUIT BOARD, AC-85
920	1-631-794-11	o	PRINTED CIRCUIT BOARD, SW-347
921	2-269-962-00	o	COVER, SW
922	2-371-561-00	s	BUSHING (P), INSULATING
923	3-646-090-00	s	RIVET, NYLON
924	3-657-153-00	o	HINGE
925	3-673-676-01	o	RAIL, GUIDE, CHASSIS
926	3-738-963-01	o	CASE, SHIELD, VO
927	3-703-037-00	s	INSULATOR, TO-220
928	3-718-661-01	o	SUPPORT, TC
929	3-718-718-02	o	HEAT SINK (TA)
930	3-738-903-01	s	KNOB, ADJUST
931	3-738-923-01	o	HOLDER, LED
932	4-601-472-00	o	COVER, FUSE
933	A-7062-154-A	o	MOUNTED CIRCUIT BOARD, DI-12
934	3-165-107-01	o	SHIELD PLATE, DI-12
935	3-165-108-01	o	SHIELD PLATE, DI-13
936	3-701-822-00	o	HOLDER, WIRE
937	3-718-661-01	o	SUPPORT, TC

Ornamental Panel Block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PWH3 x 5
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1002
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BVTT2 x 6
1024
1020
1021
PWH3 x 5
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B4 x 6
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1025
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1007
B4 x 6
BVTT2 x 6
1003
PS4 x 20
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1033
1022
1029
1009
K 2.6 x 6
1019
1021
B4 x 6

No.	Part No.	SP	Description
1001	X-3661-073-0	s	KNOB ASSY, CONTROL
1002	X-3668-075-0	s	KNOB ASSY, CONTROL
1003	X-3738-905-1	o	WINDOW ASSY
1004	X-3738-908-1	o	FRONT PANEL (P) ASSY
1005	X-3738-907-1	o	KEY PANEL ASSY
1006	2-284-744-00	o	CUSHION (B), KEY
1007	3-642-656-01	s	LEG
1008	3-668-008-02	s	PUSH BUTTON (3X5)
1009	3-668-012-00	s	RUBBER, DIAL KNOB
1010	3-672-782-02	s	KEY TOP (A) 'PLAY'
1011	3-672-782-11	s	KEY TOP (A) 'REC'
1012	3-672-783-02	s	KEY TOP (B) 'REW'
1013	3-672-783-12	s	KEY TOP (B) 'F FWD'
1014	3-672-783-32	s	KEY TOP (B) 'EJECT'
1015	3-672-783-42	s	KEY TOP (B) 'STOP'
1016	3-672-783-52	s	KEY TOP (B) 'PAUSE'
1017	3-688-814-01	s	CAP, SWITCH
1018	3-703-082-21	s	LABEL, CAUTION
1019	3-717-370-01	o	KNOB, DIAL
1020	3-717-374-01	o	FRAME (23X12), ORNAMENTAL, SW
1021	3-717-382-01	s	KNOB, LEVER SW
1022	3-717-557-01	o	PLATE, KNOB
1023	3-717-613-01	o	PLATE ORNAMENTAL. LSW
1024	3-721-101-71	o	DOOR
1025	3-733-602-01	s	KEY TOP (S)
1026	3-733-605-01	s	COVER, LED
1027	3-733-606-01	s	PUSH BUTTON (5X9)
1028	3-738-906-01	s	KEY TOP (TR)
1029	3-738-907-01	s	FRAME, ORNAMENTAL, LEVER SW
1030	3-738-912-01	s	PIN (9), PUSH BUTTON
1031	3-738-924-02	o	PLATE, TOP
1032	3-738-925-03	o	PLATE (LEFT), SIDE
1033	3-738-926-03	o	PLATE (RIGHT), SIDE
1034	3-738-927-01	o	PLATE, BOTTOM
1035	4-309-349-00	s	SPRING
1036	4-866-613-00	s	SPRING, COMPRESSION

14-3. ELECTRICAL PARTS LIST

CAPACITOR, CHIP CERAMIC

Part No.	SP	Description
1-163-083-00	s	CAP, CHIP CERAMIC 1pF +-0.25pF 50V
1-163-085-00	s	CAP, CHIP CERAMIC 2pF +-0.25pF 50V
1-163-087-00	s	CAP, CHIP CERAMIC 4pF +-0.25pF 50V
1-163-089-00	s	CAP, CHIP CERAMIC 6pF +-0.5pF 50V
1-163-091-00	s	CAP, CHIP CERAMIC 8pF +-0.5pF 50V
1-163-093-00	s	CAP, CHIP CERAMIC 10pF 5% 50V
1-163-097-00	s	CAP, CHIP CERAMIC 15pF 5% 50V
1-163-101-00	s	CAP, CHIP CERAMIC 22pF 5% 50V
1-163-105-00	s	CAP, CHIP CERAMIC 33pF 5% 50V
1-163-109-00	s	CAP, CHIP CERAMIC 47pF 5% 50V
1-163-113-00	s	CAP, CHIP CERAMIC 68pF 5% 50V
1-163-117-00	s	CAP, CHIP CERAMIC 100pF 5% 50V
1-163-121-00	s	CAP, CHIP CERAMIC 150pF 5% 50V
1-163-125-00	s	CAP, CHIP CERAMIC 220pF 5% 50V
1-163-129-00	s	CAP, CHIP CERAMIC 330pF 5% 50V
1-163-133-00	s	CAP, CHIP CERAMIC 470pF 5% 50V
1-163-137-00	s	CAP, CHIP CERAMIC 680pF 5% 50V
1-163-141-00	s	CAP, CHIP CERAMIC 1000pF 5% 50V
1-163-145-00	s	CAP, CHIP CERAMIC 1500pF 10% 50V
1-163-013-00	s	CAP, CHIP CERAMIC 2200pF 10% 50V
1-163-015-00	s	CAP, CHIP CERAMIC 3300pF 10% 50V
1-163-017-00	s	CAP, CHIP CERAMIC 4700pF 10% 50V
1-163-019-00	s	CAP, CHIP CERAMIC 6800pF 10% 50V
1-163-021-00	s	CAP, CHIP CERAMIC 0.01 10% 50V
1-163-023-00	s	CAP, CHIP CERAMIC 0.015 10% 50V
1-163-034-00	s	CAP, CHIP CERAMIC 0.033 50V
1-163-035-00	s	CAP, CHIP CERAMIC 0.047 50V
1-163-036-00	s	CAP, CHIP CERAMIC 0.068 50V
1-163-038-00	s	CAP, CHIP CERAMIC 0.1 50V

CAPACITOR, ELECTROLYTIC

Part No.	SP	Description
1-124-902-00	s	CAP, ELECT 0.47 20% 50V
1-124-791-11	s	CAP, ELECT 1.0 20% 100V
1-124-925-11	s	CAP, ELECT 2.2 20% 100V
1-123-382-00	s	CAP, ELECT 3.3 20% 100V
1-124-927-00	s	CAP, ELECT 4.7 20% 100V
1-123-875-91	s	CAP, ELECT 10 20% 50V
1-124-915-11	s	CAP, ELECT 10 20% 63V
1-124-667-11	s	CAP, ELECT 10 20% 100V
1-124-908-11	s	CAP, ELECT 22 20% 50V
1-124-916-11	s	CAP, ELECT 22 20% 63V
1-124-929-11	s	CAP, ELECT 22 20% 100V
1-124-963-11	s	CAP, ELECT 33 20% 16V
1-124-482-11	s	CAP, ELECT 33 20% 35V
1-124-917-11	s	CAP, ELECT 33 20% 63V
1-124-930-11	s	CAP, ELECT 33 20% 100V
1-124-446-11	s	CAP, ELECT 47 20% 10V
1-124-477-11	s	CAP, ELECT 47 20% 25V
1-124-910-11	s	CAP, ELECT 47 20% 50V
1-124-918-11	s	CAP, ELECT 47 20% 63V
1-124-931-11	s	CAP, ELECT 47 20% 100V
1-124-443-00	s	CAP, ELECT 100 20% 10V
1-126-101-11	s	CAP, ELECT 100 20% 16V
1-124-478-11	s	CAP, ELECT 100 20% 25V
1-124-122-11	s	CAP, ELECT 100 20% 50V
1-124-572-11	s	CAP, ELECT 100 20% 63V
1-123-605-00	s	CAP, ELECT 100 20% 100V
1-124-444-00	s	CAP, ELECT 220 20% 10V
1-124-120-11	s	CAP, ELECT 220 20% 25V
1-124-484-11	s	CAP, ELECT 220 20% 35V
1-124-911-11	s	CAP, ELECT 220 20% 50V
1-124-919-51	s	CAP, ELECT 220 20% 63V
1-124-628-11	s	CAP, ELECT 220 20% 100V
1-124-442-00	s	CAP, ELECT 330 20% 6.3V
1-124-604-00	s	CAP, ELECT 330 20% 10V
1-124-119-00	s	CAP, ELECT 330 20% 16V
1-124-479-11	s	CAP, ELECT 330 20% 25V
1-124-485-11	s	CAP, ELECT 330 20% 35V
1-124-912-11	s	CAP, ELECT 330 20% 50V
1-124-472-11	s	CAP, ELECT 470 20% 10V
1-124-475-11	s	CAP, ELECT 470 20% 16V
1-124-480-11	s	CAP, ELECT 470 20% 25V
1-126-104-11	s	CAP, ELECT 470 20% 35V
1-124-913-11	s	CAP, ELECT 470 20% 50V
1-124-921-11	s	CAP, ELECT 470 20% 63V
1-124-471-00	s	CAP, ELECT 1000 20% 6.3V
1-124-473-11	s	CAP, ELECT 1000 20% 10V
1-124-555-00	s	CAP, ELECT 1000 20% 16V
1-124-557-11	s	CAP, ELECT 1000 20% 25V
1-126-105-11	s	CAP, ELECT 1000 20% 35V
1-124-637-11	s	CAP, ELECT 1000 20% 50V
1-124-922-11	s	CAP, ELECT 1000 20% 63V
1-124-893-11	s	CAP, ELECT 2200 20% 10V
1-124-556-11	s	CAP, ELECT 2200 20% 16V
1-124-563-11	s	CAP, ELECT 2200 20% 25V
1-124-618-11	s	CAP, ELECT 2200 20% 35V
1-124-607-11	s	CAP, ELECT 2200 20% 50V
1-124-621-11	s	CAP, ELECT 3300 20% 6.3V
1-124-887-00	s	CAP, ELECT 3300 20% 16V
1-124-636-00	s	CAP, ELECT 3300 20% 25V
1-124-762-00	s	CAP, ELECT 4700 20% 10V

(CAPACITOR, ELECTROLYTIC)

Part No.	SP	Description
1-124-898-11	s	CAP, ELECT 4700 20% 16V
1-124-564-11	s	CAP, ELECT 4700 20% 25V
1-124-891-11	s	CAP, ELECT 10000 20% 6.3V
1-124-763-00	s	CAP, ELECT 10000 20% 10V
1-124-902-00	s	CAP, ELECT 0.47 20% 50V
1-124-791-11	s	CAP, ELECT 1.0 20% 100V
1-124-925-11	s	CAP, ELECT 2.2 20% 100V
1-123-382-00	s	CAP, ELECT 3.3 20% 100V
1-124-927-00	s	CAP, ELECT 4.7 20% 100V
1-123-875-91	s	CAP, ELECT 10 20% 50V
1-124-908-11	s	CAP, ELECT 22 20% 50V
1-124-963-11	s	CAP, ELECT 33 20% 16V
1-124-482-11	s	CAP, ELECT 33 20% 35V
1-124-917-11	s	CAP, ELECT 33 20% 63V
1-124-446-11	s	CAP, ELECT 47 20% 10V
1-124-477-11	s	CAP, ELECT 47 20% 25V
1-124-910-11	s	CAP, ELECT 47 20% 50V
1-124-443-00	s	CAP, ELECT 100 20% 10V
1-126-101-11	s	CAP, ELECT 100 20% 16V
1-124-478-11	s	CAP, ELECT 100 20% 25V
1-124-122-11	s	CAP, ELECT 100 20% 50V
1-124-444-00	s	CAP, ELECT 220 20% 10V
1-124-120-11	s	CAP, ELECT 220 20% 25V
1-124-484-11	s	CAP, ELECT 220 20% 35V
1-124-911-11	s	CAP, ELECT 220 20% 50V
1-124-442-00	s	CAP, ELECT 330 20% 6.3V
1-124-604-00	s	CAP, ELECT 330 20% 10V
1-124-119-00	s	CAP, ELECT 330 20% 16V
1-124-479-11	s	CAP, ELECT 330 20% 25V
1-124-485-11	s	CAP, ELECT 330 20% 35V
1-124-912-11	s	CAP, ELECT 330 20% 50V
1-124-472-11	s	CAP, ELECT 470 20% 10V
1-124-475-11	s	CAP, ELECT 470 20% 16V
1-124-480-11	s	CAP, ELECT 470 20% 25V
1-126-104-11	s	CAP, ELECT 470 20% 35V
1-124-913-11	s	CAP, ELECT 470 20% 50V

RESISTOR, CHIP

Part No.	SP	Description
1-216-295-00	s	RES, CHIP 0 5% 1/10W
1-216-298-00	s	RES, CHIP 2.2 5% 1/10W
1-216-302-00	s	RES, CHIP 2.7 5% 1/10W
1-216-304-00	s	RES, CHIP 3.3 5% 1/10W
1-216-306-00	s	RES, CHIP 3.9 5% 1/10W
1-216-308-00	s	RES, CHIP 4.7 5% 1/10W
1-216-309-00	s	RES, CHIP 5.6 5% 1/10W
1-216-311-00	s	RES, CHIP 6.8 5% 1/10W
1-216-313-00	s	RES, CHIP 8.2 5% 1/10W
1-216-001-00	s	RES, CHIP 10 5% 1/10W
1-216-003-00	s	RES, CHIP 12 5% 1/10W
1-216-005-00	s	RES, CHIP 15 5% 1/10W
1-216-007-00	s	RES, CHIP 18 5% 1/10W
1-216-009-00	s	RES, CHIP 22 5% 1/10W
1-216-011-00	s	RES, CHIP 27 5% 1/10W
1-216-013-00	s	RES, CHIP 33 5% 1/10W
1-216-015-00	s	RES, CHIP 39 5% 1/10W
1-216-017-00	s	RES, CHIP 47 5% 1/10W
1-216-019-00	s	RES, CHIP 56 5% 1/10W
1-216-021-00	s	RES, CHIP 68 5% 1/10W
1-216-023-00	s	RES, CHIP 82 5% 1/10W
1-216-025-00	s	RES, CHIP 100 5% 1/10W
1-216-027-00	s	RES, CHIP 120 5% 1/10W
1-216-029-00	s	RES, CHIP 150 5% 1/10W
1-216-031-00	s	RES, CHIP 180 5% 1/10W
1-216-033-00	s	RES, CHIP 220 5% 1/10W
1-216-035-00	s	RES, CHIP 270 5% 1/10W
1-216-037-00	s	RES, CHIP 330 5% 1/10W
1-216-039-00	s	RES, CHIP 390 5% 1/10W
1-216-041-00	s	RES, CHIP 470 5% 1/10W
1-216-043-00	s	RES, CHIP 560 5% 1/10W
1-216-045-00	s	RES, CHIP 680 5% 1/10W
1-216-047-00	s	RES, CHIP 820 5% 1/10W
1-216-049-00	s	RES, CHIP 1k 5% 1/10W
1-216-051-00	s	RES, CHIP 1.2k 5% 1/10W
1-216-053-00	s	RES, CHIP 1.5k 5% 1/10W
1-216-055-00	s	RES, CHIP 1.8k 5% 1/10W
1-216-057-00	s	RES, CHIP 2.2k 5% 1/10W
1-216-059-00	s	RES, CHIP 2.7k 5% 1/10W
1-216-061-00	s	RES, CHIP 3.3k 5% 1/10W
1-216-063-00	s	RES, CHIP 3.9k 5% 1/10W
1-216-065-00	s	RES, CHIP 4.7k 5% 1/10W
1-216-067-00	s	RES, CHIP 5.6k 5% 1/10W
1-216-069-00	s	RES, CHIP 6.8k 5% 1/10W
1-216-071-00	s	RES, CHIP 8.2k 5% 1/10W
1-216-073-00	s	RES, CHIP 10k 5% 1/10W
1-216-075-00	s	RES, CHIP 12k 5% 1/10W
1-216-077-00	s	RES, CHIP 15k 5% 1/10W
1-216-079-00	s	RES, CHIP 18k 5% 1/10W
1-216-081-00	s	RES, CHIP 22k 5% 1/10W
1-216-083-00	s	RES, CHIP 27k 5% 1/10W
1-216-085-00	s	RES, CHIP 33k 5% 1/10W
1-216-087-00	s	RES, CHIP 39k 5% 1/10W
1-216-089-00	s	RES, CHIP 47k 5% 1/10W
1-216-091-00	s	RES, CHIP 56k 5% 1/10W
1-216-093-00	s	RES, CHIP 68k 5% 1/10W
1-216-095-00	s	RES, CHIP 82k 5% 1/10W
1-216-097-00	s	RES, CHIP 100k 5% 1/10W
1-216-099-00	s	RES, CHIP 120k 5% 1/10W
1-216-101-00	s	RES, CHIP 150k 5% 1/10W

(RESISTOR, CHIP)

Part No.	SP	Description
1-216-103-00	s	RES, CHIP 180k 5% 1/10W
1-216-105-00	s	RES, CHIP 220k 5% 1/10W
1-216-107-00	s	RES, CHIP 270k 5% 1/10W
1-216-109-00	s	RES, CHIP 330k 5% 1/10W
1-216-111-00	s	RES, CHIP 390k 5% 1/10W
1-216-113-00	s	RES, CHIP 470k 5% 1/10W
1-216-115-00	s	RES, CHIP 560k 5% 1/10W
1-216-117-00	s	RES, CHIP 680k 5% 1/10W
1-216-119-00	s	RES, CHIP 820k 5% 1/10W
1-216-121-00	s	RES, CHIP 1.0M 5% 1/10W
1-216-123-00	s	RES, CHIP 1.2M 5% 1/10W
1-216-125-00	s	RES, CHIP 1.5M 5% 1/10W
1-216-127-00	s	RES, CHIP 1.8M 5% 1/10W
1-216-129-00	s	RES, CHIP 2.2M 5% 1/10W
1-216-131-00	s	RES, CHIP 2.7M 5% 1/10W
1-216-133-00	s	RES, CHIP 3.3M 5% 1/10W

CONNECTOR

Part No.	SP	Description
1-506-467-11	o	RECEPTACLE 2P MALE (STRAIGHT TYPE)
1-506-481-11	o	RECEPTACLE 2P MALE (ANGLE TYPE)
1-562-147-11	o	HOUSING 2P
1-563-088-11	o	CONTACT AWG24-30
1-563-089-11	o	CONTACT AWG32
1-506-468-11	o	RECEPTACLE 3P MALE (STRAIGHT TYPE)
1-506-482-11	o	RECEPTACLE 3P MALE (ANGLE TYPE)
1-562-148-11	o	HOUSING 3P
1-563-088-11	o	CONTACT AWG24-30
1-563-089-11	o	CONTACT AWG32
1-506-469-11	o	RECEPTACLE 4P MALE (STRAIGHT TYPE)
1-506-483-21	o	RECEPTACLE 4P MALE (ANGLE TYPE)
1-562-149-11	o	HOUSING 4P
1-563-088-11	o	CONTACT AWG24-30
1-563-089-11	o	CONTACT AWG32
1-506-470-11	o	RECEPTACLE 5P MALE (STRAIGHT TYPE)
1-506-484-11	o	RECEPTACLE 5P MALE (ANGLE TYPE)
1-562-150-11	o	HOUSING 5P
1-563-088-11	o	CONTACT AWG24-30
1-563-089-11	o	CONTACT AWG32
1-506-471-31	o	RECEPTACLE 6P MALE (STRAIGHT TYPE)
1-506-485-11	o	RECEPTACLE 6P MALE (ANGLE TYPE)
1-562-151-11	o	HOUSING 6P
1-563-088-11	o	CONTACT AWG24-30
1-563-089-11	o	CONTACT AWG32
1-506-472-11	o	RECEPTACLE 7P MALE (STRAIGHT TYPE)
1-506-486-11	o	RECEPTACLE 7P MALE (ANGLE TYPE)
1-562-152-11	o	HOUSING 7P
1-563-088-11	o	CONTACT AWG24-30
1-563-089-11	o	CONTACT AWG32
1-506-473-11	o	RECEPTACLE 8P MALE (STRAIGHT TYPE)
1-506-487-11	o	RECEPTACLE 8P MALE (ANGLE TYPE)
1-562-153-11	o	HOUSING 8P
1-563-088-11	o	CONTACT AWG24-30
1-563-089-11	o	CONTACT AWG32
1-506-474-11	o	RECEPTACLE 9P MALE (STRAIGHT TYPE)
1-506-488-11	o	RECEPTACLE 9P MALE (ANGLE TYPE)
1-562-154-11	o	HOUSING 9P
1-563-088-11	o	CONTACT AWG24-30
1-563-089-11	o	CONTACT AWG32
1-506-475-11	o	RECEPTACLE 10P MALE (STRAIGHT TYPE)
1-506-489-11	o	RECEPTACLE 10P MALE (ANGLE TYPE)
1-562-155-11	o	HOUSING 10P
1-563-088-11	o	CONTACT AWG24-30
1-563-089-11	o	CONTACT AWG32
1-506-476-11	o	RECEPTACLE 11P MALE (STRAIGHT TYPE)
1-506-490-21	o	RECEPTACLE 11P MALE (ANGLE TYPE)
1-562-156-11	o	HOUSING 11P
1-563-088-11	o	CONTACT AWG24-30
1-563-089-11	o	CONTACT AWG32
1-506-477-11	o	RECEPTACLE 12P MALE (STRAIGHT TYPE)
1-506-491-11	o	RECEPTACLE 12P MALE (ANGLE TYPE)
1-562-157-11	o	HOUSING 12P
1-563-088-11	o	CONTACT AWG24-30
1-563-089-11	o	CONTACT AWG32
1-506-478-11	o	RECEPTACLE 13P MALE (STRAIGHT TYPE)
1-506-492-11	o	RECEPTACLE 13P MALE (ANGLE TYPE)
1-562-627-11	o	HOUSING 13P
1-563-088-11	o	CONTACT AWG24-30
1-563-089-11	o	CONTACT AWG32

(CONNECTOR)

Part No.	SP	Description
1-506-479-11	o	RECEPTACLE 14P MALE (STRAIGHT TYPE)
1-506-493-11	o	RECEPTACLE 14P MALE (ANGLE TYPE)
1-562-185-11	o	HOUSING 14P
1-563-088-11	o	CONTACT AWG24-30
1-563-089-11	o	CONTACT AWG32
1-506-480-11	o	RECEPTACLE 15P MALE (STRAIGHT TYPE)
1-506-494-11	o	RECEPTACLE 15P MALE (ANGLE TYPE)
1-562-958-11	o	HOUSING 15P
1-563-088-11	o	CONTACT AWG24-30
1-563-089-11	o	CONTACT AWG32

INDUCTOR, MICRO

Part No.	SP	Description
1-408-876-00	s	INDUCTOR, MICRO 0.18 5%
1-408-877-00	s	INDUCTOR, MICRO 0.22 5%
1-408-878-00	s	INDUCTOR, MICRO 0.33 5%
1-408-879-21	s	INDUCTOR, MICRO 0.47 5%
1-408-931-00	s	INDUCTOR, MICRO 0.56 5%
1-408-880-00	s	INDUCTOR, MICRO 0.68 5%
1-408-763-00	s	INDUCTOR, MICRO 0.82 5%
1-408-397-00	s	INDUCTOR, MICRO 1.0 5%
1-408-398-00	s	INDUCTOR, MICRO 1.2 5%
1-408-399-00	s	INDUCTOR, MICRO 1.5 5%
1-408-400-00	s	INDUCTOR, MICRO 1.8 5%
1-408-401-00	s	INDUCTOR, MICRO 2.2 5%
1-408-402-00	s	INDUCTOR, MICRO 2.7 5%
1-408-403-00	s	INDUCTOR, MICRO 3.3 5%
1-408-404-00	s	INDUCTOR, MICRO 3.9 5%
1-408-405-00	s	INDUCTOR, MICRO 4.7 5%
1-408-406-00	s	INDUCTOR, MICRO 5.6 5%
1-408-407-00	s	INDUCTOR, MICRO 6.8 5%
1-408-408-00	s	INDUCTOR, MICRO 8.2 5%
1-408-409-00	s	INDUCTOR, MICRO 10 5%
1-408-410-00	s	INDUCTOR, MICRO 12 5%
1-408-411-00	s	INDUCTOR, MICRO 15 5%
1-408-412-00	s	INDUCTOR, MICRO 18 5%
1-408-413-00	s	INDUCTOR, MICRO 22 5%
1-408-414-00	s	INDUCTOR, MICRO 27 5%
1-408-415-00	s	INDUCTOR, MICRO 33 5%
1-408-416-00	s	INDUCTOR, MICRO 39 5%
1-408-417-21	s	INDUCTOR, MICRO 47 5%
1-408-418-00	s	INDUCTOR, MICRO 56 5%
1-408-419-00	s	INDUCTOR, MICRO 68 5%
1-408-420-00	s	INDUCTOR, MICRO 82 5%
1-408-421-00	s	INDUCTOR, MICRO 100 5%
1-408-422-00	s	INDUCTOR, MICRO 120 5%
1-408-423-00	s	INDUCTOR, MICRO 150 5%
1-408-424-00	s	INDUCTOR, MICRO 180 5%
1-408-425-00	s	INDUCTOR, MICRO 220 5%
1-408-426-00	s	INDUCTOR, MICRO 270 5%
1-408-427-00	s	INDUCTOR, MICRO 330 5%
1-408-428-00	s	INDUCTOR, MICRO 390 5%
1-408-429-00	s	INDUCTOR, MICRO 470 5%

AA-16 BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	A-6713-363-A	o	MOUNTED CIRCUIT BOARD, AA-16
C1	1-162-294-31	s	CERAMIC 0.001uF 10% 50V
C12	1-162-207-31	s	CERAMIC 22PF 5% 50V
C100	1-126-103-11	s	ELECT 470uF 20% 16V
C101	1-162-294-31	s	CERAMIC 0.001uF 10% 50V
C112	1-162-207-31	s	CERAMIC 22PF 5% 50V
C150	1-161-379-00	s	CERAMIC 0.01uF 20% 25V
D10	8-719-911-19	s	DIODE 1SS119
D11	8-719-911-19	s	DIODE 1SS119
D110	8-719-911-19	s	DIODE 1SS119
D111	8-719-911-19	s	DIODE 1SS119
D150	8-719-109-93	s	DIODE RD6.2ES-B2
IC101	8-759-981-98	s	IC RC4560DD
PS1	1-532-727-11	s	LINK, IC 0.25A
Q10	8-729-306-92	s	TRANSISTOR 2SD669A
Q11	8-729-304-92	s	TRANSISTOR 2SB649A
Q12	8-729-201-05	s	TRANSISTOR 2SC2878-B
Q110	8-729-306-92	s	TRANSISTOR 2SD669A
Q111	8-729-304-92	s	TRANSISTOR 2SB649A
Q112	8-729-201-05	s	TRANSISTOR 2SC2878-B
R1	1-247-826-00	s	CARBON 620 5% 1/4W
R2	1-249-394-11	s	CARBON 12 5% 1/4W
R3	1-249-426-11	s	CARBON 5.6K 5% 1/4W
R4	1-249-426-11	s	CARBON 5.6K 5% 1/4W
R5	1-249-415-11	s	CARBON 680 5% 1/4W
R6	1-249-413-11	s	CARBON 470 5% 1/4W
R7	1-249-418-11	s	CARBON 1.2K 5% 1/4W
R8	1-249-427-11	s	CARBON 6.8K 5% 1/4W
R10	1-249-417-11	s	CARBON 1K 5% 1/4W
R11	1-249-426-11	s	CARBON 5.6K 5% 1/4W
R12	1-249-437-11	s	CARBON 47K 5% 1/4W
R13	1-249-429-11	s	CARBON 10K 5% 1/4W
R14	1-249-429-11	s	CARBON 10K 5% 1/4W
R15	1-249-393-11	s	CARBON 10 5% 1/4W
R16	1-249-417-11	s	CARBON 1K 5% 1/4W
R17	1-249-417-11	s	CARBON 1K 5% 1/4W
R18	1-249-478-11	s	CARBON 2.2 5% 1/2W
R19	1-249-478-11	s	CARBON 2.2 5% 1/2W
R20	1-249-389-11	s	CARBON 4.7 5% 1/4W
R21	1-249-417-11	s	CARBON 1K 5% 1/4W
R101	1-247-826-00	s	CARBON 620 5% 1/4W
R102	1-249-394-11	s	CARBON 12 5% 1/4W
R103	1-249-426-11	s	CARBON 5.6K 5% 1/4W
R104	1-249-426-11	s	CARBON 5.6K 5% 1/4W
R105	1-249-415-11	s	CARBON 680 5% 1/4W
R106	1-249-413-11	s	CARBON 470 5% 1/4W
R107	1-249-418-11	s	CARBON 1.2K 5% 1/4W
R108	1-249-427-11	s	CARBON 6.8K 5% 1/4W
R110	1-249-417-11	s	CARBON 1K 5% 1/4W
R111	1-249-426-11	s	CARBON 5.6K 5% 1/4W
R112	1-249-437-11	s	CARBON 47K 5% 1/4W
R113	1-249-429-11	s	CARBON 10K 5% 1/4W
R114	1-249-429-11	s	CARBON 10K 5% 1/4W
R115	1-249-393-11	s	CARBON 10 5% 1/4W
R116	1-249-417-11	s	CARBON 1K 5% 1/4W
R117	1-249-417-11	s	CARBON 1K 5% 1/4W
R118	1-249-478-11	s	CARBON 2.2 5% 1/2W
R119	1-249-478-11	s	CARBON 2.2 5% 1/2W
R120	1-249-389-11	s	CARBON 4.7 5% 1/4W
R121	1-249-417-11	s	CARBON 1K 5% 1/4W
R150	1-249-417-11	s	CARBON 1K 5% 1/4W
T1	1-423-261-11	s	TRANSFORMER, INPUT
T10	1-427-586-11	s	TRANSFORMER, INPUT/OUTPUT
T101	1-423-261-11	s	TRANSFORMER, INPUT
T110	1-427-586-11	s	TRANSFORMER, INPUT/OUTPUT

AC-89 BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	⚠1-622-786-11	o	PRINTED CIRCUIT BOARD, AC-89
C1	1-136-211-00	s	FILM 0.022uF 20% 250V
C2	1-136-185-00	s	FILM 0.22uF 20% 250V
CN1	⚠1-506-371-00	o	CONNECTOR, 2P, MALE
F1	⚠1-533-189-11	o	HOLDER, FUSE
L1	1-421-556-21	s	FILTER, LINE
R1	1-214-937-00	s	METAL 1M 1% 1/2W

NOTE: Please see pages 14-15 thru 14-18 for the parts that are not listed in the parts list.

AU-127 BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	A-7061-778-A	o	MOUNTED CIRCUIT BOARD, AU-127
1pc	7-682-903-01	s	SCREW +PWH 3X5
C1	1-124-360-00	s	ELECT 1000uF 20% 16V
C2	1-126-233-11	s	ELECT 22uF 20% 50V
C3	1-126-103-11	s	ELECT 470uF 20% 16V
C101	1-130-471-00	s	MYLAR 0.001uF 5% 50V
C102	1-123-875-11	s	ELECT 10uF 20% 50V
C103	1-123-875-11	s	ELECT 10uF 20% 50V
C104	1-123-875-11	s	ELECT 10uF 20% 50V
C105	1-161-051-00	s	CERAMIC 0.01uF 10% 50V
C113	1-123-875-11	s	ELECT 10uF 20% 50V
C115	1-107-202-00	s	MICA 10PF 5% 500V
C116	1-161-051-00	s	CERAMIC 0.01uF 10% 50V
C119	1-123-875-11	s	ELECT 10uF 20% 50V
C120	1-161-055-00	s	CERAMIC 0.022uF 10% 50V
C121	1-161-055-00	s	CERAMIC 0.022uF 10% 50V
C201	1-130-471-00	s	MYLAR 0.001uF 5% 50V
C202	1-123-875-11	s	ELECT 10uF 20% 50V
C203	1-123-875-11	s	ELECT 10uF 20% 50V
C204	1-123-875-11	s	ELECT 10uF 20% 50V
C205	1-161-051-00	s	CERAMIC 0.01uF 10% 50V
C213	1-123-875-11	s	ELECT 10uF 20% 50V
C215	1-107-202-00	s	MICA 10PF 5% 500V
C216	1-161-051-00	s	CERAMIC 0.01uF 10% 50V
C219	1-123-875-11	s	ELECT 10uF 20% 50V
C220	1-161-055-00	s	CERAMIC 0.022uF 10% 50V
C221	1-161-494-00	s	CERAMIC 0.022uF 25V
C301	1-123-875-11	s	ELECT 10uF 20% 50V
C303	1-123-875-11	s	ELECT 10uF 20% 50V
C304	1-123-875-11	s	ELECT 10uF 20% 50V
C305	1-123-875-11	s	ELECT 10uF 20% 50V
C359	1-161-021-11	s	CERAMIC 0.047uF 10% 25V
C364	1-107-202-00	s	MICA 10PF 5% 500V
C401	1-161-051-00	s	CERAMIC 0.01uF 10% 50V
C402	1-124-927-11	s	ELECT 4.7uF 20% 100V
C405	1-107-202-00	s	MICA 10PF 5% 500V
C406	1-161-494-00	s	CERAMIC 0.022uF 25V
C407	1-161-021-11	s	CERAMIC 0.047uF 10% 25V
C501	1-161-051-00	s	CERAMIC 0.01uF 10% 50V
C502	1-124-927-11	s	ELECT 4.7uF 20% 100V
C505	1-107-208-00	s	MICA 18PF 5% 500V
C506	1-161-494-00	s	CERAMIC 0.022uF 25V
C507	1-161-021-11	s	CERAMIC 0.047uF 10% 25V
C604	1-123-875-11	s	ELECT 10uF 20% 50V
C704	1-123-875-11	s	ELECT 10uF 20% 50V
C804	1-130-497-00	s	MYLAR 0.15uF 5% 50V
C904	1-130-497-00	s	MYLAR 0.15uF 5% 50V
C909	1-123-875-11	s	ELECT 10uF 20% 50V
CN208	1-506-471-11	s	CONNECTOR, 6P, MALE
CN211	1-506-471-11	s	CONNECTOR, 6P, MALE
D1	8-719-109-93	s	DIODE RD6.2ES-B2
D2	8-719-109-57	s	DIODE RD2.4ES-B2
D4	8-719-200-02	s	DIODE 10E2
D5	8-719-200-02	s	DIODE 10E2
D8	8-719-200-02	s	DIODE 10E2
D9	8-719-200-02	s	DIODE 10E2
D11	8-719-911-19	s	DIODE 1SS119

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Ref. No. or Q'ty	Part No.	SP	Description
D101	8-719-911-19	s	DIODE 1SS119
D102	8-719-109-93	s	DIODE RD6.2ES-B2
D103	8-719-911-19	s	DIODE 1SS119
D104	8-719-911-19	s	DIODE 1SS119
D106	8-719-911-19	s	DIODE 1SS119
D107	8-719-109-93	s	DIODE RD6.2ES-B2
D201	8-719-911-19	s	DIODE 1SS119
D202	8-719-109-93	s	DIODE RD6.2ES-B2
D203	8-719-911-19	s	DIODE 1SS119
D204	8-719-911-19	s	DIODE 1SS119
D206	8-719-911-19	s	DIODE 1SS119
D207	8-719-109-93	s	DIODE RD6.2ES-B2
D351	8-719-911-19	s	DIODE 1SS119
D352	8-719-911-19	s	DIODE 1SS119
D354	8-719-911-19	s	DIODE 1SS119
D401	8-719-109-93	s	DIODE RD6.2ES-B2
D402	8-719-911-19	s	DIODE 1SS119
D403	8-719-911-19	s	DIODE 1SS119
D404	8-719-911-19	s	DIODE 1SS119
D405	8-719-911-19	s	DIODE 1SS119
D501	8-719-109-93	s	DIODE RD6.2ES-B2
D502	8-719-911-19	s	DIODE 1SS119
D503	8-719-911-19	s	DIODE 1SS119
D504	8-719-911-19	s	DIODE 1SS119
D505	8-719-911-19	s	DIODE 1SS119
D601	8-719-911-19	s	DIODE 1SS119
D602	8-719-911-19	s	DIODE 1SS119
D701	8-719-911-19	s	DIODE 1SS119
D702	8-719-911-19	s	DIODE 1SS119
IC101	8-759-700-62	s	IC NJM4562D
IC102	8-759-700-62	s	IC NJM4562D
IC103	8-759-208-10	s	IC TC4053BPHB
IC201	8-759-700-62	s	IC NJM4562D
IC301	8-759-990-82	s	IC TL082CP
IC302	8-759-208-08	s	IC TC4052BPHB
IC351	8-759-700-62	s	IC NJM4562D
IC401	8-759-700-62	s	IC NJM4562D
IC501	8-759-700-62	s	IC NJM4562D
IC601	8-759-208-08	s	IC TC4052BPHB
IC602	8-759-208-10	s	IC TC4053BPHB
IC603	8-759-700-62	s	IC NJM4562D
IC801	8-759-802-46	s	IC LA4550
L101	1-407-519-00	s	INDUCTOR
L201	1-407-519-00	s	INDUCTOR
Q1	8-729-119-76	s	TRANSISTOR 2SA1115P
Q2	8-729-119-78	s	TRANSISTOR 2SC2785-HFE
Q3	8-729-119-76	s	TRANSISTOR 2SA1115P
Q4	8-729-119-76	s	TRANSISTOR 2SA1115P
Q5	8-729-119-76	s	TRANSISTOR 2SA1115P
Q101	8-729-119-78	s	TRANSISTOR 2SC2785-HFE
Q102	8-729-119-78	s	TRANSISTOR 2SC2785-HFE
Q103	8-729-119-78	s	TRANSISTOR 2SC2785-HFE
Q104	8-729-900-89	s	TRANSISTOR DTC144ES
Q201	8-729-119-78	s	TRANSISTOR 2SC2785-HFE
Q202	8-729-119-78	s	TRANSISTOR 2SC2785-HFE
Q203	8-729-119-78	s	TRANSISTOR 2SC2785-HFE
Q204	8-729-900-89	s	TRANSISTOR DTC144ES
Q351	8-729-201-05	s	TRANSISTOR 2SC2878-B

NOTE: Please see pages 14-15 thru 14-18 for the parts that are not listed in the parts list.

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Ref. No. or Q'ty	Part No.	SP	Description
Q352	8-729-201-05	s	TRANSISTOR 2SC2878-B
Q401	8-729-201-05	s	TRANSISTOR 2SC2878-B
Q402	8-729-201-05	s	TRANSISTOR 2SC2878-B
Q403	8-729-201-05	s	TRANSISTOR 2SC2878-B
Q501	8-729-201-05	s	TRANSISTOR 2SC2878-B
Q502	8-729-201-05	s	TRANSISTOR 2SC2878-B
Q503	8-729-201-05	s	TRANSISTOR 2SC2878-B
Q601	8-729-201-05	s	TRANSISTOR 2SC2878-B
Q602	8-729-119-78	s	TRANSISTOR 2SC2785-HFE
Q701	8-729-201-05	s	TRANSISTOR 2SC2878-B
Q702	8-729-119-78	s	TRANSISTOR 2SC2785-HFE
Q801	8-729-201-05	s	TRANSISTOR 2SC2878-B
Q802	8-729-201-05	s	TRANSISTOR 2SC2878-B
Q803	8-729-201-05	s	TRANSISTOR 2SC2878-B
Q901	8-729-201-05	s	TRANSISTOR 2SC2878-B
Q902	8-729-201-05	s	TRANSISTOR 2SC2878-B
Q903	8-729-201-05	s	TRANSISTOR 2SC2878-B
Q904	8-729-119-78	s	TRANSISTOR 2SC2785-HFE
R1	1-249-428-11	s	CARBON 8.2K 5% 1/4W
R2	1-249-417-11	s	CARBON 1K 5% 1/4W
R3	1-249-429-11	s	CARBON 10K 5% 1/4W
R4	1-249-405-11	s	CARBON 100 5% 1/4W
R5	1-249-433-11	s	CARBON 22K 5% 1/4W
R6	1-249-433-11	s	CARBON 22K 5% 1/4W
R7	1-249-433-11	s	CARBON 22K 5% 1/4W
R8	1-249-433-11	s	CARBON 22K 5% 1/4W
R9	1-249-433-11	s	CARBON 22K 5% 1/4W
R10	1-249-433-11	s	CARBON 22K 5% 1/4W
R11	1-249-441-11	s	CARBON 100K 5% 1/4W
R12	1-249-441-11	s	CARBON 100K 5% 1/4W
R13	1-249-441-11	s	CARBON 100K 5% 1/4W
R14	1-249-401-11	s	CARBON 47 5% 1/4W
R101	1-249-437-11	s	CARBON 47K 5% 1/4W
R102	1-249-437-11	s	CARBON 47K 5% 1/4W
R103	1-249-425-11	s	CARBON 4.7K 5% 1/4W
R104	1-247-891-00	s	CARBON 330K 5% 1/4W
R105	1-249-417-11	s	CARBON 1K 5% 1/4W
R106	1-249-429-11	s	CARBON 10K 5% 1/4W
R107	1-249-437-11	s	CARBON 47K 5% 1/4W
R108	1-249-437-11	s	CARBON 47K 5% 1/4W
R109	1-249-429-11	s	CARBON 10K 5% 1/4W
R110	1-249-437-11	s	CARBON 47K 5% 1/4W
R111	1-249-437-11	s	CARBON 47K 5% 1/4W
R112	1-249-429-11	s	CARBON 10K 5% 1/4W
R113	1-249-401-11	s	CARBON 47 5% 1/4W
R114	1-247-887-00	s	CARBON 220K 5% 1/4W
R115	1-249-405-11	s	CARBON 100 5% 1/4W
R116	1-249-405-11	s	CARBON 100 5% 1/4W
R117	1-249-433-11	s	CARBON 22K 5% 1/4W
R118	1-249-433-11	s	CARBON 22K 5% 1/4W
R119	1-249-417-11	s	CARBON 1K 5% 1/4W
R120	1-249-441-11	s	CARBON 100K 5% 1/4W
R121	1-249-437-11	s	CARBON 47K 5% 1/4W
R122	1-249-421-11	s	CARBON 2.2K 5% 1/4W
R123	1-249-437-11	s	CARBON 47K 5% 1/4W
R124	1-249-417-11	s	CARBON 1K 5% 1/4W
R127	1-249-405-11	s	CARBON 100 5% 1/4W
R128	1-249-437-11	s	CARBON 47K 5% 1/4W

(AU-127 BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
R129	1-249-437-11	s	CARBON 47K 5% 1/4W
R201	1-249-437-11	s	CARBON 47K 5% 1/4W
R202	1-249-437-11	s	CARBON 47K 5% 1/4W
R203	1-249-425-11	s	CARBON 4.7K 5% 1/4W
R204	1-247-891-00	s	CARBON 330K 5% 1/4W
R205	1-249-417-11	s	CARBON 1K 5% 1/4W
R206	1-249-429-11	s	CARBON 10K 5% 1/4W
R207	1-249-437-11	s	CARBON 47K 5% 1/4W
R208	1-249-437-11	s	CARBON 47K 5% 1/4W
R209	1-249-429-11	s	CARBON 10K 5% 1/4W
R210	1-249-437-11	s	CARBON 47K 5% 1/4W
R211	1-249-437-11	s	CARBON 47K 5% 1/4W
R212	1-249-429-11	s	CARBON 10K 5% 1/4W
R213	1-249-401-11	s	CARBON 47 5% 1/4W
R214	1-247-887-00	s	CARBON 220K 5% 1/4W
R215	1-249-405-11	s	CARBON 100 5% 1/4W
R216	1-249-405-11	s	CARBON 100 5% 1/4W
R217	1-249-433-11	s	CARBON 22K 5% 1/4W
R219	1-249-417-11	s	CARBON 1K 5% 1/4W
R220	1-249-441-11	s	CARBON 100K 5% 1/4W
R221	1-249-437-11	s	CARBON 47K 5% 1/4W
R222	1-249-421-11	s	CARBON 2.2K 5% 1/4W
R223	1-249-437-11	s	CARBON 47K 5% 1/4W
R224	1-249-417-11	s	CARBON 1K 5% 1/4W
R227	1-249-405-11	s	CARBON 100 5% 1/4W
R228	1-249-437-11	s	CARBON 47K 5% 1/4W
R301	1-249-437-11	s	CARBON 47K 5% 1/4W
R302	1-249-437-11	s	CARBON 47K 5% 1/4W
R303	1-249-405-11	s	CARBON 100 5% 1/4W
R305	1-249-425-11	s	CARBON 4.7K 5% 1/4W
R306	1-249-429-11	s	CARBON 10K 5% 1/4W
R307	1-249-437-11	s	CARBON 47K 5% 1/4W
R308	1-249-437-11	s	CARBON 47K 5% 1/4W
R309	1-249-437-11	s	CARBON 47K 5% 1/4W
R311	1-249-437-11	s	CARBON 47K 5% 1/4W
R312	1-249-433-11	s	CARBON 22K 5% 1/4W
R313	1-249-433-11	s	CARBON 22K 5% 1/4W
R314	1-249-433-11	s	CARBON 22K 5% 1/4W
R315	1-249-433-11	s	CARBON 22K 5% 1/4W
R351	1-249-421-11	s	CARBON 2.2K 5% 1/4W
R352	1-249-441-11	s	CARBON 100K 5% 1/4W
R353	1-249-421-11	s	CARBON 2.2K 5% 1/4W
R354	1-249-437-11	s	CARBON 47K 5% 1/4W
R355	1-249-385-11	s	CARBON 2.2 5% 1/4W
R356	1-249-434-11	s	CARBON 27K 5% 1/4W
R358	1-249-429-11	s	CARBON 10K 5% 1/4W
R359	1-249-425-11	s	CARBON 4.7K 5% 1/4W
R360	1-249-437-11	s	CARBON 47K 5% 1/4W
R361	1-249-437-11	s	CARBON 47K 5% 1/4W
R362	1-249-437-11	s	CARBON 47K 5% 1/4W
R364	1-249-433-11	s	CARBON 22K 5% 1/4W
R365	1-249-433-11	s	CARBON 22K 5% 1/4W
R366	1-249-437-11	s	CARBON 47K 5% 1/4W
R367	1-249-437-11	s	CARBON 47K 5% 1/4W
R370	1-249-437-11	s	CARBON 47K 5% 1/4W
R371	1-249-437-11	s	CARBON 47K 5% 1/4W
R372	1-249-437-11	s	CARBON 47K 5% 1/4W
R373	1-249-433-11	s	CARBON 22K 5% 1/4W
R374	1-249-437-11	s	CARBON 47K 5% 1/4W

NOTE: Please see pages 14-15 thru 14-18 for the parts that are not listed in the parts list.

(AU-127 BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
R375	1-249-433-11	s	CARBON 22K 5% 1/4W
R376	1-249-433-11	s	CARBON 22K 5% 1/4W
R377	1-249-433-11	s	CARBON 22K 5% 1/4W
R378	1-249-417-11	s	CARBON 1K 5% 1/4W
R379	1-249-441-11	s	CARBON 100K 5% 1/4W
R380	1-249-429-11	s	CARBON 10K 5% 1/4W
R401	1-249-417-11	s	CARBON 1K 5% 1/4W
R402	1-249-421-11	s	CARBON 2.2K 5% 1/4W
R404	1-249-421-11	s	CARBON 2.2K 5% 1/4W
R405	1-249-437-11	s	CARBON 47K 5% 1/4W
R406	1-249-422-11	s	CARBON 2.7K 5% 1/4W
R407	1-249-425-11	s	CARBON 4.7K 5% 1/4W
R409	1-249-433-11	s	CARBON 22K 5% 1/4W
R410	1-249-433-11	s	CARBON 22K 5% 1/4W
R411	1-249-433-11	s	CARBON 22K 5% 1/4W
R412	1-249-422-11	s	CARBON 2.7K 5% 1/4W
R413	1-249-429-11	s	CARBON 10K 5% 1/4W
R414	1-249-441-11	s	CARBON 100K 5% 1/4W
R415	1-249-417-11	s	CARBON 1K 5% 1/4W
R416	1-249-441-11	s	CARBON 100K 5% 1/4W
R417	1-249-429-11	s	CARBON 10K 5% 1/4W
R418	1-249-431-11	s	CARBON 15K 5% 1/4W
R501	1-249-417-11	s	CARBON 1K 5% 1/4W
R502	1-249-421-11	s	CARBON 2.2K 5% 1/4W
R504	1-249-421-11	s	CARBON 2.2K 5% 1/4W
R505	1-249-437-11	s	CARBON 47K 5% 1/4W
R506	1-249-422-11	s	CARBON 2.7K 5% 1/4W
R507	1-249-425-11	s	CARBON 4.7K 5% 1/4W
R509	1-249-433-11	s	CARBON 22K 5% 1/4W
R510	1-249-433-11	s	CARBON 22K 5% 1/4W
R511	1-249-433-11	s	CARBON 22K 5% 1/4W
R512	1-249-422-11	s	CARBON 2.7K 5% 1/4W
R513	1-249-429-11	s	CARBON 10K 5% 1/4W
R514	1-249-441-11	s	CARBON 100K 5% 1/4W
R515	1-249-417-11	s	CARBON 1K 5% 1/4W
R516	1-249-441-11	s	CARBON 100K 5% 1/4W
R517	1-249-429-11	s	CARBON 10K 5% 1/4W
R601	1-249-437-11	s	CARBON 47K 5% 1/4W
R602	1-249-429-11	s	CARBON 10K 5% 1/4W
R603	1-249-425-11	s	CARBON 4.7K 5% 1/4W
R604	1-249-437-11	s	CARBON 47K 5% 1/4W
R605	1-249-421-11	s	CARBON 2.2K 5% 1/4W
R606	1-249-419-11	s	CARBON 1.5K 5% 1/4W
R607	1-249-429-11	s	CARBON 10K 5% 1/4W
R608	1-249-433-11	s	CARBON 22K 5% 1/4W
R609	1-249-425-11	s	CARBON 4.7K 5% 1/4W
R610	1-249-411-11	s	CARBON 330 5% 1/4W
R611	1-249-389-11	s	CARBON 4.7 5% 1/4W
R701	1-249-437-11	s	CARBON 47K 5% 1/4W
R702	1-249-429-11	s	CARBON 10K 5% 1/4W
R703	1-249-425-11	s	CARBON 4.7K 5% 1/4W
R704	1-249-437-11	s	CARBON 47K 5% 1/4W
R705	1-249-421-11	s	CARBON 2.2K 5% 1/4W
R706	1-249-419-11	s	CARBON 1.5K 5% 1/4W
R707	1-249-429-11	s	CARBON 10K 5% 1/4W
R708	1-249-433-11	s	CARBON 22K 5% 1/4W
R709	1-249-425-11	s	CARBON 4.7K 5% 1/4W
R710	1-249-411-11	s	CARBON 330 5% 1/4W
R711	1-249-389-11	s	CARBON 4.7 5% 1/4W

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Ref. No. or Q'ty	Part No.	SP	Description
R801	1-249-421-11	s	CARBON 2.2K 5% 1/4W
R802	1-249-439-11	s	CARBON 68K 5% 1/4W
R803	1-249-419-11	s	CARBON 1.5K 5% 1/4W
R804	1-249-407-11	s	CARBON 150 5% 1/4W
R805	1-249-437-11	s	CARBON 47K 5% 1/4W
R806	1-249-389-11	s	CARBON 4.7 5% 1/4W
R807	1-249-415-11	s	CARBON 680 5% 1/4W
R808	1-249-389-11	s	CARBON 4.7 5% 1/4W
R809	1-249-421-11	s	CARBON 2.2K 5% 1/4W
R811	1-249-421-11	s	CARBON 2.2K 5% 1/4W
R812	1-249-421-11	s	CARBON 2.2K 5% 1/4W
R901	1-249-421-11	s	CARBON 2.2K 5% 1/4W
R902	1-249-439-11	s	CARBON 68K 5% 1/4W
R903	1-249-419-11	s	CARBON 1.5K 5% 1/4W
R904	1-249-407-11	s	CARBON 150 5% 1/4W
R905	1-249-437-11	s	CARBON 47K 5% 1/4W
R906	1-249-389-11	s	CARBON 4.7 5% 1/4W
R907	1-249-415-11	s	CARBON 680 5% 1/4W
R908	1-249-389-11	s	CARBON 4.7 5% 1/4W
R909	1-249-421-11	s	CARBON 2.2K 5% 1/4W
R911	1-249-421-11	s	CARBON 2.2K 5% 1/4W
R912	1-249-421-11	s	CARBON 2.2K 5% 1/4W
R913	1-249-437-11	s	CARBON 47K 5% 1/4W
R914	1-249-425-11	s	CARBON 4.7K 5% 1/4W
R915	1-249-417-11	s	CARBON 1K 5% 1/4W
R916	1-249-441-11	s	CARBON 100K 5% 1/4W
RV101	1-228-996-00	s	RES, ADJ, METAL 47K
RV201	1-228-996-00	s	RES, ADJ, METAL 47K
RV301	1-228-995-00	s	RES, ADJ, METAL 22K
RV302	1-228-995-00	s	RES, ADJ, METAL 22K
RV351	1-228-996-00	s	RES, ADJ, METAL 47K
RV401	1-228-993-00	s	RES, ADJ, METAL 4.7K
RV501	1-228-993-00	s	RES, ADJ, METAL 4.7K
RV601	1-228-990-00	s	RES, ADJ, METAL 1K
RV701	1-228-990-00	s	RES, ADJ, METAL 1K

CP-141 BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	1-631-807-11	o	PRINTED CIRCUIT BOARD, CP-141
R001	1-215-392-00	s	METAL 62 1% 1/6W
R002	1-247-804-11	s	CARBON 75 5% 1/4W
R003	1-215-376-00	s	METAL 13 1% 1/6W

NOTE: Please see pages 14-15 thru 14-18 for the parts that are not listed in the parts list.

CP-162 BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	1-635-085-11	o	PRINTED CIRCUIT BOARD, CP-162
CN1007	1-566-850-31	s	CONNECTOR, (S) TERMINAL 4P
CN1008	1-566-850-31	s	CONNECTOR, (S) TERMINAL 4P

DC-45A BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	A-7062-150-A	o	MOUNTED CIRCUIT BOARD, DC-45A
2pcs	1-533-189-11	o	HOLDER, FUSE
2pcs	2-371-561-00	s	BUSHING (P), INSULATING
2pcs	3-703-037-00	s	INSULATOR, TO-220
4pcs	3-718-718-02	o	HEAT SINK (A)
4pcs	7-621-759-65	s	+PSW, 2.6X8
2pcs	7-682-903-01	s	SCREW +PWH 3X5
C2	1-161-379-00	s	CERAMIC 0.01uF 20% 25V
C4	1-161-379-00	s	CERAMIC 0.01uF 20% 25V
C6	1-161-494-00	s	CERAMIC 0.022uF 25V
C8	1-161-494-00	s	CERAMIC 0.022uF 25V
C11	1-161-494-00	s	CERAMIC 0.022uF 25V
C13	1-161-494-00	s	CERAMIC 0.022uF 25V
C14	1-161-494-00	s	CERAMIC 0.022uF 25V
C16	1-161-494-00	s	CERAMIC 0.022uF 25V
C18	1-161-379-00	s	CERAMIC 0.01uF 20% 25V
C21	1-125-579-11	s	DOUBLE LAYERS 0.1 FARAD 5.5V
C100	1-161-379-00	s	CERAMIC 0.01uF 20% 25V
CP1	1-464-978-11	s	CONVERTER DC-DC (CD-86)
D1	8-719-110-17	s	DIODE RD10ES-B2
D2	8-719-911-55	s	DIODE U05G
D3	8-719-911-55	s	DIODE U05G
D4	8-719-911-55	s	DIODE U05G
D5	8-719-911-55	s	DIODE U05G
F2	⚠1-532-286-00	s	FUSE, TIMELAG 2.5A 250V
IC1	8-759-982-10	s	IC RC7809FA
IC2	8-759-982-05	s	IC RC7805FA
IC3	8-759-135-80	s	IC UPC358C
L1	1-410-087-31	s	INDUCTOR 10mH
L2	1-410-064-11	s	INDUCTOR 2.7mH
PS1	⚠1-532-844-21	s	LINK, IC 3.15A
PS3	⚠1-532-844-21	s	LINK, IC 3.15A
PS4	⚠1-532-838-21	s	LINK, IC 0.8A
PS5	⚠1-532-841-21	s	LINK, IC 1.6A
Q1	8-729-119-76	s	TRANSISTOR 2SA1115P
Q2	8-729-385-82	s	TRANSISTOR 2SB858-C
Q3	8-729-900-89	s	TRANSISTOR DTC144ES
Q4	8-729-900-65	s	TRANSISTOR DTA144ES
Q5	8-729-900-89	s	TRANSISTOR DTC144ES
Q6	8-729-382-64	s	TRANSISTOR 2SC1826-G
Q7	8-729-900-89	s	TRANSISTOR DTC144ES
R1	1-249-417-11	s	CARBON 1K 5% 1/4W
R2	1-249-417-11	s	CARBON 1K 5% 1/4W
R3	1-249-425-11	s	CARBON 4.7K 5% 1/4W
R4	1-249-408-11	s	CARBON 180 5% 1/4W
R5	1-249-427-11	s	CARBON 6.8K 5% 1/4W
R6	1-249-420-11	s	CARBON 1.8K 5% 1/4W
R7	1-215-444-00	s	METAL 9.1K 1% 1/6W
R8	1-215-443-00	s	METAL 8.2K 1% 1/6W
R9	1-249-417-11	s	CARBON 1K 5% 1/4W
R10	1-249-425-11	s	CARBON 4.7K 5% 1/4W
R11	1-249-417-11	s	CARBON 1K 5% 1/4W
R12	1-249-433-11	s	CARBON 22K 5% 1/4W
R13	1-249-437-11	s	CARBON 47K 5% 1/4W
R15	1-249-405-11	s	CARBON 100 5% 1/4W

NOTE: Please see pages 14-15 thru 14-18 for the parts that are not listed in the parts list.

(DC-45A BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
R16	1-249-425-11	s	CARBON 4.7K 5% 1/4W
R17	1-249-425-11	s	CARBON 4.7K 5% 1/4W
R18	1-249-441-11	s	CARBON 100K 5% 1/4W
RV1	1-230-496-11	s	RES, ADJ, METAL 10K

DD-12 BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	A-7061-772-A	o	MOUNTED CIRCUIT BOARD, DD-12

This board includes the DP-101 Board.

Ref. No. or Q'ty	Part No.	SP	Description
1pc	1-535-699-11	s	CABLE, JUMPER 23P
D1	8-719-911-19	s	DIODE 1SS119
D321	8-719-911-19	s	DIODE 1SS119
IC2	8-759-645-16	s	IC M54516P
IC3	8-759-645-16	s	IC M54516P
Q308	8-729-903-02	s	TRANSISTOR DTA143XS
Q309	8-729-903-02	s	TRANSISTOR DTA143XS
Q310	8-729-903-02	s	TRANSISTOR DTA143XS
Q311	8-729-903-02	s	TRANSISTOR DTA143XS
Q312	8-729-903-02	s	TRANSISTOR DTA143XS
Q313	8-729-903-02	s	TRANSISTOR DTA143XS
Q314	8-729-903-02	s	TRANSISTOR DTA143XS
R366	1-249-402-11	s	CARBON 56 5% 1/4W
R367	1-249-402-11	s	CARBON 56 5% 1/4W
R368	1-249-402-11	s	CARBON 56 5% 1/4W
R369	1-249-402-11	s	CARBON 56 5% 1/4W
R370	1-249-402-11	s	CARBON 56 5% 1/4W
R371	1-249-402-11	s	CARBON 56 5% 1/4W
R372	1-249-402-11	s	CARBON 56 5% 1/4W
S1009	1-516-995-00	s	SWITCH, LEVER SLIDE
S1010	1-552-539-00	s	SWITCH, TACTILE

DI-12 BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	A-7062-154-A	o	MOUNTED CIRCUIT BOARD, DI-12
C31	1-163-103-00	s	CERAMIC, CHIP 27PF 5% 50V
C36	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C220	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C221	1-164-005-11	s	CERAMIC, CHIP 0.47uF 25V
C237	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C246	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C248	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C249	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C250	1-164-182-11	s	CERAMIC CHIP 3300PF 10% 100V
C252	1-126-157-11	s	ELECT 10uF 20% 16V
C258	1-163-098-00	s	CERAMIC, CHIP 16PF 5% 50V
C260	1-124-638-11	s	ELECT 22uF 20% 10V
C263	1-162-638-11	s	CERAMIC, CHIP 1uF 16V
C266	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C267	1-162-638-11	s	CERAMIC, CHIP 1uF 16V
C273	1-124-638-11	s	ELECT 22uF 20% 10V
C277	1-124-638-11	s	ELECT 22uF 20% 10V
C285	1-124-638-11	s	ELECT 22uF 20% 10V
C289	1-126-176-11	s	ELECT 220uF 20% 10V
C290	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C298	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C309	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C319	1-164-161-11	s	CERAMIC, CHIP 0.0022uF 10% 100V
C322	1-124-638-11	s	ELECT 22uF 20% 10V
C323	1-124-638-11	s	ELECT 22uF 20% 10V
C401	1-126-157-11	s	ELECT 10uF 20% 16V
C407	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C408	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C409	1-131-361-00	s	TANTALUM 2.2uF 10% 20V
C410	1-126-157-11	s	ELECT 10uF 20% 16V
C413	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C419	1-164-161-11	s	CERAMIC, CHIP 0.0022uF 10% 100V
C422	1-131-374-00	s	TANTALUM 33uF 10% 16V
C426	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C429	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C430	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C431	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C432	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C433	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C502	1-124-638-11	s	ELECT 22uF 20% 10V
C507	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C510	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C780	1-163-009-11	s	CERAMIC, CHIP 0.001uF 10% 50V
C782	1-164-161-11	s	CERAMIC, CHIP 0.0022uF 10% 100V
C783	1-163-022-00	s	CERAMIC, CHIP 0.012uF 10% 50V
C790	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C791	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C794	1-163-009-11	s	CERAMIC, CHIP 0.001uF 10% 50V
C798	1-124-256-00	s	ELECT 1.5uF 20% 50V
C799	1-126-157-11	s	ELECT 10uF 20% 16V
C870	1-163-009-11	s	CERAMIC, CHIP 0.001uF 10% 50V
C871	1-164-161-11	s	CERAMIC, CHIP 0.0022uF 10% 100V
C900	1-131-345-00	s	TANTALUM 0.47uF 10% 35V
CN655	1-506-471-11	s	CONNECTOR, 6P, MALE
CN662	1-506-471-11	s	CONNECTOR, 6P, MALE
CV31	1-141-276-00	s	CAP, TRIMMER B

NOTE: Please see pages 14-15 thru 14-18 for the parts that are not listed in the parts list.

(DI-12 BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
CV301	1-141-276-00	s	CAP, TRIMMER B
CV302	1-141-276-00	s	CAP, TRIMMER B
D31	8-713-300-88	s	DIODE 1T33C-01
D301	8-713-300-88	s	DIODE 1T33C-01
D302	8-713-300-88	s	DIODE 1T33C-01
D308	8-719-940-45	s	DIODE DWA010
D401	8-719-940-45	s	DIODE DWA010
D403	8-719-940-45	s	DIODE DWA010
D404	8-719-104-10	s	DIODE 1SS99
FL201	1-421-927-21	s	FILTER, NOISE
IC301	8-759-987-17	s	IC CXD1226Q
IC302	8-759-987-18	s	IC CXD1227Q
IC303	8-759-987-19	s	IC CXD1228Q
IC304	8-759-987-20	s	IC CXD1229Q
IC305	8-752-337-41	s	IC CXK1206M
IC306	8-752-337-41	s	IC CXK1206M
IC307	8-752-337-41	s	IC CXK1206M
IC308	8-752-329-21	s	IC CXD1175M
IC309	8-752-329-21	s	IC CXD1175M
IC310	8-752-032-96	s	IC CXA1106M
IC311	8-752-032-96	s	IC CXA1106M
IC312	8-759-926-23	s	IC SN74HC163NS
IC313	8-759-925-85	s	IC SN74HC32NS
IC316	8-759-206-28	s	IC TC74HC123F
IC401	8-759-009-07	s	IC MC14053BF
IC402	8-759-100-93	s	IC UPC393G2
IC403	8-759-009-51	s	IC MC14538BF
IC404	8-759-981-65	s	IC LM2903M
IC405	8-759-925-80	s	IC SN74HC14NS
IC406	8-759-925-90	s	IC SN74HC74NS
IC410	8-759-981-65	s	IC LM2903M
IC500	8-749-920-71	s	IC SI3522V
IC501	8-759-011-65	s	IC MC74HC4053F
IC780	8-759-009-51	s	IC MC14538BF
IC781	8-759-925-90	s	IC SN74HC74NS
IC782	8-759-926-20	s	IC SN74HC160NS
IC783	8-759-925-99	s	IC SN74HC109NS
IC790	8-759-987-20	s	IC CXD1229Q
IC791	8-759-908-17	s	IC TL082CPS
IC792	8-759-925-90	s	IC SN74HC74NS
IC850	8-759-925-76	s	IC SN74HC08NS
IC851	8-759-038-15	s	IC MC74HC4538AF
IC852	8-759-009-51	s	IC MC14538BF
IC853	8-759-925-90	s	IC SN74HC74NS
IC854	8-759-929-73	s	IC SN74LS00NS
IC855	8-759-926-29	s	IC SN74HC175NS
L201	1-410-482-31	s	INDUCTOR 100uH
L202	1-410-482-31	s	INDUCTOR 100uH
L205	1-410-482-31	s	INDUCTOR 100uH
L206	1-410-482-31	s	INDUCTOR 100uH
L211	1-410-466-41	s	INDUCTOR 4.7uH
L212	1-410-478-11	s	INDUCTOR 47uH
L214	1-410-478-11	s	INDUCTOR 47uH
L215	1-410-478-11	s	INDUCTOR 47uH
L216	1-410-478-11	s	INDUCTOR 47uH
L223	1-410-478-11	s	INDUCTOR 47uH

(DI-12 BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
L224	1-410-478-11	s	INDUCTOR 47uH
L501	1-410-478-11	s	INDUCTOR 47uH
L502	1-410-482-31	s	INDUCTOR 100uH
L810	1-410-482-31	s	INDUCTOR 100uH
L811	1-410-482-31	s	INDUCTOR 100uH
L812	1-410-482-31	s	INDUCTOR 100uH
Q31	8-729-201-27	s	TRANSISTOR 2SC2715-Y
Q32	8-729-140-47	s	TRANSISTOR 2SC3735-B34
Q205	8-729-100-66	s	TRANSISTOR 2SC1623
Q210	8-729-100-66	s	TRANSISTOR 2SC1623
Q212	8-729-100-66	s	TRANSISTOR 2SC1623
Q214	8-729-100-66	s	TRANSISTOR 2SC1623
Q224	8-729-100-66	s	TRANSISTOR 2SC1623
Q401	8-729-201-27	s	TRANSISTOR 2SC2715-Y
Q402	8-729-201-27	s	TRANSISTOR 2SC2715-Y
Q403	8-729-901-06	s	TRANSISTOR DTA144EK
Q404	8-729-216-22	s	TRANSISTOR 2SA1162
Q405	8-729-201-27	s	TRANSISTOR 2SC2715-Y
Q406	8-729-216-22	s	TRANSISTOR 2SA1162
Q501	8-729-100-66	s	TRANSISTOR 2SC1623
Q502	8-729-100-66	s	TRANSISTOR 2SC1623
Q629	8-729-901-01	s	TRANSISTOR DTC144EK
Q780	8-729-901-01	s	TRANSISTOR DTC144EK
Q900	8-729-900-89	s	TRANSISTOR DTC144ES
Q901	8-729-119-76	s	TRANSISTOR 2SA1115P
R31	1-216-692-11	s	METAL, CHIP 51K 0.5% 1/10W
R32	1-216-658-11	s	METAL, CHIP 2K 0.5% 1/10W
R34	1-216-638-11	s	METAL, CHIP 300 0.5% 1/10W
R35	1-216-653-11	s	METAL, CHIP 1.2K 0.5% 1/10W
R36	1-216-648-11	s	METAL, CHIP 750 0.5% 1/10W
R37	1-216-671-11	s	METAL, CHIP 6.8K 0.5% 1/10W
R38	1-216-686-11	s	METAL, CHIP 30K 0.5% 1/10W
R248	1-216-675-11	s	METAL, CHIP 10K 0.5% 1/10W
R249	1-216-675-11	s	METAL, CHIP 10K 0.5% 1/10W
R266	1-216-648-11	s	METAL, CHIP 750 0.5% 1/10W
R407	1-216-675-11	s	METAL, CHIP 10K 0.5% 1/10W
R409	1-216-667-11	s	METAL, CHIP 4.7K 0.5% 1/10W
R429	1-216-748-11	s	METAL, CHIP 39K 1% 1/10W
R440	1-216-066-00	s	METAL, CHIP 5.1K 5% 1/10W
R470	1-216-084-00	s	METAL, CHIP 30K 5% 1/10W
R490	1-216-675-11	s	METAL, CHIP 10K 0.5% 1/10W
R491	1-216-674-11	s	METAL, CHIP 9.1K 0.5% 1/10W
R496	1-247-897-11	s	CARBON 560K 5% 1/4W
R501	1-216-666-11	s	METAL, CHIP 4.3K 0.5% 1/10W
R502	1-216-676-11	s	METAL, CHIP 11K 0.5% 1/10W
R782	1-216-682-11	s	METAL, CHIP 20K 0.5% 1/10W
R799	1-216-643-11	s	METAL, CHIP 470 0.5% 1/10W
R859	1-216-689-11	s	METAL, CHIP 39K 0.5% 1/10W
R900	1-249-429-11	s	CARBON 10K 5% 1/4W
R901	1-215-453-00	s	METAL 22K 1% 1/6W
R903	1-249-423-11	s	CARBON 3.3K 5% 1/4W
RV401	1-228-994-00	s	RES, ADJ, METAL 10K
RV402	1-228-994-00	s	RES, ADJ, METAL 10K
RV403	1-228-996-00	s	RES, ADJ, METAL 47K
X31	1-577-704-11	s	CRYSTAL 14.21875MHz
X301	1-567-344-21	s	VCO, CRYSTAL 17.734475MHz

NOTE: Please see pages 14-15 thru 14-18 for the parts that are not listed in the parts list.

DI-13 BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	A-7062-155-A	o	MOUNTED CIRCUIT BOARD, DI-13
C11	1-163-103-00	s	CERAMIC, CHIP 27PF 5% 50V
C16	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C21	1-163-103-00	s	CERAMIC, CHIP 27PF 5% 50V
C26	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C230	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C235	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C236	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C243	1-163-127-00	s	CERAMIC, CHIP 270PF 5% 50V
C244	1-163-139-00	s	CERAMIC, CHIP 820PF 5% 50V
C550	1-163-099-00	s	CERAMIC, CHIP 18PF 5% 50V
C653	1-163-110-00	s	CERAMIC, CHIP 51PF 5% 50V
C654	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C655	1-126-103-11	s	ELECT 470uF 20% 16V
C656	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C658	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C660	1-163-110-00	s	CERAMIC, CHIP 51PF 5% 50V
C663	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C664	1-126-103-11	s	ELECT 470uF 20% 16V
C701	1-126-176-11	s	ELECT 220uF 20% 10V
C702	1-126-176-11	s	ELECT 220uF 20% 10V
C703	1-126-176-11	s	ELECT 220uF 20% 10V
C704	1-126-176-11	s	ELECT 220uF 20% 10V
C711	1-163-112-00	s	CERAMIC, CHIP 62PF 5% 50V
C713	1-163-112-00	s	CERAMIC, CHIP 62PF 5% 50V
C715	1-131-341-00	s	TANTALUM 0.1uF 10% 35V
C730	1-126-094-11	s	ELECT 4.7uF 20% 35V
C751	1-131-347-00	s	TANTALUM 1uF 10% 35V
C752	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C753	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C754	1-126-233-11	s	ELECT 22uF 20% 50V
C755	1-126-233-11	s	ELECT 22uF 20% 50V
C761	1-163-011-11	s	CERAMIC 0.0015uF 10% 50V
C762	1-126-157-11	s	ELECT 10uF 20% 16V
CN652	1-506-471-11	s	CONNECTOR, 6P, MALE
CN672	1-506-471-11	s	CONNECTOR, 6P, MALE
CV11	1-141-227-00	s	CAP, TRIMMER 20PF
CV21	1-141-227-00	s	CAP, TRIMMER 20PF
D11	8-713-300-88	s	DIODE 1T33C-01
D21	8-713-300-88	s	DIODE 1T33C-01
D701	8-719-800-76	s	DIODE 1SS226
D702	8-719-800-76	s	DIODE 1SS226
FL651	1-235-759-11	s	FILTER, LOW-PASS
FL652	1-235-181-00	s	FILTER, BANDPASS 4.43MHz
IC710	8-741-104-00	s	IC BX1040
IC711	8-759-101-12	s	IC UPC311G2
IC720	8-752-335-47	s	IC CXD1216M
IC740	8-752-332-67	s	IC CXD1217M
IC750	8-759-206-28	s	IC TC74HC123F
IC751	8-759-009-07	s	IC MC14053BF
IC752	8-759-906-53	s	IC TL062CPS
IC770	8-759-926-56	s	IC SN74HC273NS
IC771	8-759-926-56	s	IC SN74HC273NS
IC772	8-759-926-56	s	IC SN74HC273NS
IC774	8-759-926-56	s	IC SN74HC273NS
IC775	8-759-926-56	s	IC SN74HC273NS

(DI-13 BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
IC800	8-759-982-25	s	IC RC78L09A
L204	1-410-482-31	s	INDUCTOR 100uH
L551	1-410-482-31	s	INDUCTOR 100uH
L653	1-410-482-31	s	INDUCTOR 100uH
L654	1-410-482-31	s	INDUCTOR 100uH
L801	1-410-482-31	s	INDUCTOR 100uH
L802	1-410-482-31	s	INDUCTOR 100uH
L803	1-410-482-31	s	INDUCTOR 100uH
L804	1-410-482-31	s	INDUCTOR 100uH
L805	1-410-482-31	s	INDUCTOR 100uH
L806	1-410-482-31	s	INDUCTOR 100uH
L807	1-410-482-31	s	INDUCTOR 100uH
L808	1-410-482-31	s	INDUCTOR 100uH
L809	1-410-482-31	s	INDUCTOR 100uH
Q11	8-729-201-27	s	TRANSISTOR 2SC2715-Y
Q12	8-729-140-47	s	TRANSISTOR 2SC3735-B34
Q21	8-729-201-27	s	TRANSISTOR 2SC2715-Y
Q22	8-729-140-47	s	TRANSISTOR 2SC3735-B34
Q203	8-729-100-66	s	TRANSISTOR 2SC1623
Q204	8-729-100-66	s	TRANSISTOR 2SC1623
Q206	8-729-100-66	s	TRANSISTOR 2SC1623
Q207	8-729-100-66	s	TRANSISTOR 2SC1623
Q208	8-729-100-66	s	TRANSISTOR 2SC1623
Q209	8-729-216-22	s	TRANSISTOR 2SA1162
Q222	8-729-100-66	s	TRANSISTOR 2SC1623
Q228	8-729-100-66	s	TRANSISTOR 2SC1623
Q229	8-729-100-66	s	TRANSISTOR 2SC1623
Q651	8-729-100-66	s	TRANSISTOR 2SC1623
Q652	8-729-201-27	s	TRANSISTOR 2SC2715-Y
Q653	8-729-100-66	s	TRANSISTOR 2SC1623
Q654	8-729-100-66	s	TRANSISTOR 2SC1623
Q655	8-729-100-66	s	TRANSISTOR 2SC1623
Q656	8-729-201-27	s	TRANSISTOR 2SC2715-Y
Q657	8-729-100-66	s	TRANSISTOR 2SC1623
Q658	8-729-201-27	s	TRANSISTOR 2SC2715-Y
Q659	8-729-100-66	s	TRANSISTOR 2SC1623
Q701	8-729-100-66	s	TRANSISTOR 2SC1623
Q702	8-729-100-66	s	TRANSISTOR 2SC1623
Q710	8-729-100-66	s	TRANSISTOR 2SC1623
Q711	8-729-109-41	s	TRANSISTOR 2SK94-X1
Q720	8-729-109-41	s	TRANSISTOR 2SK94-X1
R11	1-216-692-11	s	METAL, CHIP 51K 0.5% 1/10W
R12	1-216-658-11	s	METAL, CHIP 2K 0.5% 1/10W
R14	1-216-638-11	s	METAL, CHIP 300 0.5% 1/10W
R15	1-216-653-11	s	METAL, CHIP 1.2K 0.5% 1/10W
R16	1-216-648-11	s	METAL, CHIP 750 0.5% 1/10W
R17	1-216-671-11	s	METAL, CHIP 6.8K 0.5% 1/10W
R18	1-216-686-11	s	METAL, CHIP 30K 0.5% 1/10W
R21	1-216-692-11	s	METAL, CHIP 51K 0.5% 1/10W
R22	1-216-658-11	s	METAL, CHIP 2K 0.5% 1/10W
R24	1-216-638-11	s	METAL, CHIP 300 0.5% 1/10W
R25	1-216-653-11	s	METAL, CHIP 1.2K 0.5% 1/10W
R26	1-216-648-11	s	METAL, CHIP 750 0.5% 1/10W
R27	1-216-671-11	s	METAL, CHIP 6.8K 0.5% 1/10W
R28	1-216-686-11	s	METAL, CHIP 30K 0.5% 1/10W
R550	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R552	1-216-650-11	s	METAL, CHIP 910 0.5% 1/10W

NOTE: Please see pages 14-15 thru 14-18 for the parts that are not listed in the parts list.

(DI-13 BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
R656	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R657	1-216-676-11	s	METAL, CHIP 11K 0.5% 1/10W
R669	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R670	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R681	1-215-422-00	s	METAL 1.1K 1% 1/6W
R762	1-216-676-11	s	METAL, CHIP 11K 0.5% 1/10W
R763	1-216-678-11	s	METAL, CHIP 13K 0.5% 1/10W
R768	1-216-658-11	s	METAL, CHIP 2K 0.5% 1/10W
RV201	1-228-989-00	s	RES, ADJ, METAL 470
RV202	1-228-990-00	s	RES, ADJ, METAL 1K
RV651	1-228-989-00	s	RES, ADJ, METAL 470
RV652	1-228-989-00	s	RES, ADJ, METAL 470
RV750	1-228-993-00	s	RES, ADJ, METAL 4.7K
X11	1-579-056-11	s	CRYSTAL 14.1875MHz
X21	1-579-057-11	s	CRYSTAL 17.734475MHz

DP-101 BOARD

All of the component parts on DP-101 Board are supplied together with when you order DD-12 Board.

Ref. No. or Q'ty	Part No.	SP	Description
D1	8-719-942-19	s	LED LB402VK
D2	8-719-942-19	s	LED LB402VK
D3	8-719-942-19	s	LED LB402VK
D4	8-719-942-19	s	LED LB402VK

FP-84 BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1PC	A-7070-624-A	s	MOUNTED CIRCUIT BOARD, FP-84

All of component parts on the FP-84 Board are supplied together with when you order MD-23 Board.

Ref. No. or Q'ty	Part No.	SP	Description
W801	1-562-880-11	s	CONNECTOR, 15P, FEMALE
1pc	1-625-649-11	s	PRINTED CIRCUIT BOARD, FP-84 FLEXIBLE

FP-122 BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	A-7070-625-A	o	MOUNTED CIRCUIT BOARD, FP-122

All of the component parts on the FP-122 Board are supplied together with when you order MD-23 Board.

Ref. No. or Q'ty	Part No.	SP	Description
1pc	1-625-650-11	s	PRINTED CIRCUIT BOARD, FP-122 FLEXIBLE
W901	1-562-880-11	s	CONNECTOR, 15P, FEMALE

FP-206 BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc*	1-630-923-11	o	PRINTED CIRCUIT BOARD, FP-206 FLEXIBLE

NOTE: Please see pages 14-15 thru 14-18 for the parts that are not listed in the parts list.

FR-43 BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	A-7062-165-A	o	MOUNTED CIRCUIT BOARD, FR-43
This board includes RP-73 and RP-103 Boards.			
1pc	1-559-763-11	s	CABLE, FLAT 26P
1pc	3-739-102-01	o	LID (H), UPPER, FR SHIELD CASE
C005	1-135-091-00	s	TANTALUN, CHIP 1uF 10% 16V
C007	1-135-091-00	s	TANTALUN, CHIP 1uF 10% 16V
C012	1-135-157-21	s	TANTALUM, CHIP 10uF 20% 6.3V
C031	1-135-157-21	s	TANTALUM, CHIP 10uF 20% 6.3V
C032	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C033	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C041	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C043	1-135-157-21	s	TANTALUM, CHIP 10uF 20% 6.3V
C052	1-135-211-11	s	TANTALUM, CHIP 6.8uF 20% 6.3V
C053	1-135-148-21	s	TANTALUM, CHIP 1.5uF 10% 16V
C054	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C055	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C056	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
CN001	1-562-629-11	s	CONNECTOR, 19P, FEMALE
CN002	1-565-209-11	s	CONNECTOR, FPC 26P
D001	8-719-400-18	s	DIODE 1S2837-T1
IC051	8-759-710-09	s	IC NJM2233AM
IC052	8-759-009-07	s	IC MC14053BF
L001	1-408-777-00	s	INDUCTOR, CHIP 10uH
L031	1-408-777-00	s	INDUCTOR, CHIP 10uH
L041	1-408-793-21	s	INDUCTOR, CHIP 220uH
L042	1-408-777-00	s	INDUCTOR, CHIP 10uH
L051	1-408-785-21	s	INDUCTOR, CHIP 47uH
Q001	8-729-202-38	s	TRANSISTOR 2SC3326N
Q002	8-729-202-38	s	TRANSISTOR 2SC3326N
Q003	8-729-202-38	s	TRANSISTOR 2SC3326N
Q004	8-729-202-38	s	TRANSISTOR 2SC3326N
Q005	8-729-901-05	s	TRANSISTOR DTA124EK
Q006	8-729-901-05	s	TRANSISTOR DTA124EK
Q007	8-729-901-01	s	TRANSISTOR DTC144EK
Q008	8-729-901-01	s	TRANSISTOR DTC144EK
Q009	8-729-320-17	s	TRANSISTOR 2SA1122-CD
Q031	8-729-201-27	s	TRANSISTOR 2SC2715-Y
Q032	8-729-102-07	s	TRANSISTOR 2SC2223-F13
Q041	8-729-216-22	s	TRANSISTOR 2SA1162
Q042	8-729-119-76	s	TRANSISTOR 2SA1115P
Q043	8-729-320-17	s	TRANSISTOR 2SA1122-CD
R018	1-216-695-11	s	METAL, CHIP 68K 0.5% 1/10W
RV1	1-230-871-11	s	RES, ADJ, METAL 22K
RV2	1-230-871-11	s	RES, ADJ, METAL 22K

HK-5 BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	A-7062-164-A	o	MOUNTED CIRCUIT BOARD, HK-5
1pc	3-531-576-01	s	RIVET
1pc	3-724-107-01	o	RETAINER, PC BOARD
C101	1-135-166-21	s	TANTALUM, CHIP 47uF 10% 10V
C104	1-163-011-11	s	CERAMIC 0.0015uF 10% 50V
C106	1-163-127-00	s	CERAMIC, CHIP 270PF 5% 50V
C111	1-163-115-00	s	CERAMIC, CHIP 82PF 5% 50V
C112	1-163-111-00	s	CERAMIC, CHIP 56PF 5% 50V
C116	1-135-070-00	s	TANTALUM, CHIP 0.1uF 10% 35V
C118	1-163-090-00	s	CERAMIC, CHIP 7PF 50V
C122	1-107-042-00	s	MICA 2.2PF 500V
C124	1-163-103-00	s	CERAMIC, CHIP 27PF 5% 50V
C135	1-163-090-00	s	CERAMIC, CHIP 7PF 50V
C136	1-163-099-00	s	CERAMIC, CHIP 18PF 5% 50V
C143	1-135-145-11	s	TANTALUM, CHIP 0.47uF 10% 35V
C149	1-107-206-00	s	MICA 15PF 5% 500V
C181	1-102-074-00	s	CERAMIC 0.001uF 10% 50V
C184	1-107-077-00	s	MICA 47PF 5% 50V
C201	1-135-166-21	s	TANTALUM, CHIP 47uF 10% 10V
C210	1-163-106-00	s	CERAMIC, CHIP 36PF 5% 50V
C212	1-135-211-11	s	TANTALUM, CHIP 6.8uF 20% 6.3V
C302	1-135-166-21	s	TANTALUM, CHIP 47uF 10% 10V
C303	1-163-095-00	s	CERAMIC, CHIP 12PF 5% 50V
C304	1-163-099-00	s	CERAMIC, CHIP 18PF 5% 50V
C308	1-135-166-21	s	TANTALUM, CHIP 47uF 10% 10V
C313	1-135-166-21	s	TANTALUM, CHIP 47uF 10% 10V
C314	1-163-241-11	s	CERAMIC, CHIP 39PF 5% 50V
C316	1-163-241-11	s	CERAMIC, CHIP 39PF 5% 50V
C317	1-163-111-00	s	CERAMIC, CHIP 56PF 5% 50V
C318	1-162-721-11	s	CERAMIC 300PF 1% 50V
C323	1-163-012-00	s	CERAMIC CHIP 1800PF 10% 50V
C325	1-135-156-21	s	TANTALUM, CHIP 6.8uF 10% 10V
C327	1-135-156-21	s	TANTALUM, CHIP 6.8uF 10% 10V
C329	1-135-166-21	s	TANTALUM, CHIP 47uF 10% 10V
C331	1-135-156-21	s	TANTALUM, CHIP 6.8uF 10% 10V
C332	1-135-155-21	s	TANTAL CHIP 4.7uF 10% 16V
C334	1-135-155-21	s	TANTAL CHIP 4.7uF 10% 16V
C340	1-135-072-21	s	TANTALUM, CHIP 0.22uF 10% 35V
C341	1-135-161-21	s	TANTALUM, CHIP 22uF 10% 10V
C342	1-135-166-21	s	TANTALUM, CHIP 47uF 10% 10V
C345	1-163-134-00	s	CERAMIC, CHIP 510PF 5% 50V
C348	1-135-166-21	s	TANTALUM, CHIP 47uF 10% 10V
C349	1-135-177-21	s	TANTALUM, CHIP 1uF 10% 25V
C350	1-131-367-00	s	TANTALUM 22uF 10% 20V
C402	1-124-968-11	s	ELECT, NONPOLAR 22uF 20% 6.3V
C403	1-163-106-00	s	CERAMIC, CHIP 36PF 5% 50V
C404	1-163-111-00	s	CERAMIC, CHIP 56PF 5% 50V
C405	1-163-099-00	s	CERAMIC, CHIP 18PF 5% 50V
C407	1-135-149-21	s	TANTALUM, CHIP 2.2uF 10% 10V
C409	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C411	1-163-088-00	s	CERAMIC, CHIP 5PF 50V
C412	1-135-156-21	s	TANTALUM, CHIP 6.8uF 10% 10V
C414	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C416	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C417	1-162-722-11	s	CERAMIC 330PF 1% 50V
C418	1-162-724-11	s	CERAMIC 390PF 1% 50V
C419	1-162-721-11	s	CERAMIC 300PF 1% 50V
C420	1-135-156-21	s	TANTALUM, CHIP 6.8uF 10% 10V

NOTE: Please see pages 14-15 thru 14-18 for the parts that are not listed in the parts list.

(HK-5 BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
C424	1-135-155-21	s	TANTAL CHIP 4.7uF 10% 16V
C427	1-135-161-21	s	TANTALUM, CHIP 22uF 10% 10V
C428	1-135-161-21	s	TANTALUM, CHIP 22uF 10% 10V
C429	1-135-161-21	s	TANTALUM, CHIP 22uF 10% 10V
C501	1-135-166-21	s	TANTALUM, CHIP 47uF 10% 10V
C505	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C508	1-163-111-00	s	CERAMIC, CHIP 56PF 5% 50V
C509	1-135-156-21	s	TANTALUM, CHIP 6.8uF 10% 10V
C510	1-135-156-21	s	TANTALUM, CHIP 6.8uF 10% 10V
C511	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C512	1-135-149-21	s	TANTALUM, CHIP 2.2uF 10% 10V
C516	1-135-155-21	s	TANTAL CHIP 4.7uF 10% 16V
C519	1-135-149-21	s	TANTALUM, CHIP 2.2uF 10% 10V
C520	1-163-111-00	s	CERAMIC, CHIP 56PF 5% 50V
C521	1-163-103-00	s	CERAMIC, CHIP 27PF 5% 50V
C523	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C526	1-135-161-21	s	TANTALUM, CHIP 22uF 10% 10V
C527	1-135-161-21	s	TANTALUM, CHIP 22uF 10% 10V
C531	1-135-161-21	s	TANTALUM, CHIP 22uF 10% 10V
C532	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C601	1-135-156-21	s	TANTALUM, CHIP 6.8uF 10% 10V
C607	1-135-070-00	s	TANTALUM, CHIP 0.1uF 10% 35V
C609	1-135-156-21	s	TANTALUM, CHIP 6.8uF 10% 10V
C613	1-135-073-00	s	TANTALUM, CHIP 0.33uF 10% 35V
C614	1-163-098-00	s	CERAMIC, CHIP 16PF 5% 50V
C616	1-163-108-00	s	CERAMIC, CHIP 43PF 5% 50V
C620	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C621	1-135-155-21	s	TANTAL CHIP 4.7uF 10% 16V
C622	1-135-156-21	s	TANTALUM, CHIP 6.8uF 10% 10V
C623	1-135-156-21	s	TANTALUM, CHIP 6.8uF 10% 10V
C627	1-135-149-21	s	TANTALUM, CHIP 2.2uF 10% 10V
C630	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C631	1-135-072-21	s	TANTALUM, CHIP 0.22uF 10% 35V
C632	1-135-149-21	s	TANTALUM, CHIP 2.2uF 10% 10V
C633	1-163-833-00	s	CERAMIC, CHIP 0.068uF 25V
C634	1-135-149-21	s	TANTALUM, CHIP 2.2uF 10% 10V
C635	1-164-182-11	s	CERAMIC CHIP 3300PF 10% 100V
C637	1-135-149-21	s	TANTALUM, CHIP 2.2uF 10% 10V
C644	1-163-115-00	s	CERAMIC, CHIP 82PF 5% 50V
C645	1-163-111-00	s	CERAMIC, CHIP 56PF 5% 50V
C646	1-163-119-00	s	CERAMIC, CHIP 120PF 5% 50V
C652	1-135-149-21	s	TANTALUM, CHIP 2.2uF 10% 10V
C659	1-163-111-00	s	CERAMIC, CHIP 56PF 5% 50V
C660	1-163-011-11	s	CERAMIC 0.0015uF 10% 50V
C666	1-163-011-11	s	CERAMIC 0.0015uF 10% 50V
C667	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C668	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C671	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C675	1-163-088-00	s	CERAMIC, CHIP 5PF 50V
C702	1-163-136-00	s	CERAMIC, CHIP 620PF 5% 50V
C704	1-163-120-00	s	CERAMIC, CHIP 130PF 5% 50V
C705	1-163-122-00	s	CERAMIC 160PF 5% 50V
C706	1-163-122-00	s	CERAMIC 160PF 5% 50V
C718	1-135-161-21	s	TANTALUM, CHIP 22uF 10% 10V
C720	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C721	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C722	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C723	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C724	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C725	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C726	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C727	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C728	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C731	1-163-241-11	s	CERAMIC, CHIP 39PF 5% 50V
C732	1-163-099-00	s	CERAMIC, CHIP 18PF 5% 50V
C802	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C803	1-135-161-21	s	TANTALUM, CHIP 22uF 10% 10V
C804	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C805	1-163-118-00	s	CERAMIC, CHIP 110PF 5% 50V
C807	1-163-088-00	s	CERAMIC, CHIP 5PF 50V
C809	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C812	1-135-079-21	s	TANTALUM, CHIP 3.3uF 10% 35V
C815	1-135-153-21	s	TANTALUM, CHIP 2.2uF 20% 25V
C819	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C825	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C905	1-135-156-21	s	TANTALUM, CHIP 6.8uF 10% 10V
C907	1-135-166-21	s	TANTALUM, CHIP 47uF 10% 10V
CN101	1-566-943-11	s	CONNECTOR, BOARD TO BOARD 18P
CN102	1-566-943-11	s	CONNECTOR, BOARD TO BOARD 18P
CV601	1-141-311-11	s	CAP, TRIMMER 20PF
D101	8-719-400-18	s	DIODE 1S2837-T1
D102	8-719-400-18	s	DIODE 1S2837-T1
D105	8-719-800-76	s	DIODE 1SS226
D106	8-719-400-18	s	DIODE 1S2837-T1
D107	8-719-400-18	s	DIODE 1S2837-T1
D108	8-719-400-18	s	DIODE 1S2837-T1
D109	8-719-400-18	s	DIODE 1S2837-T1
D301	8-719-400-18	s	DIODE 1S2837-T1
D302	8-719-400-18	s	DIODE 1S2837-T1
D401	8-719-400-18	s	DIODE 1S2837-T1
D402	8-719-400-18	s	DIODE 1S2837-T1
D403	8-719-400-18	s	DIODE 1S2837-T1
D404	8-719-400-18	s	DIODE 1S2837-T1
D405	8-719-400-18	s	DIODE 1S2837-T1
D501	8-719-400-18	s	DIODE 1S2837-T1
D601	8-719-800-76	s	DIODE 1SS226
D602	8-719-400-18	s	DIODE 1S2837-T1
D603	8-719-400-18	s	DIODE 1S2837-T1
D604	8-719-400-18	s	DIODE 1S2837-T1
D605	8-719-400-18	s	DIODE 1S2837-T1
D801	8-719-400-18	s	DIODE 1S2837-T1
D802	8-719-400-18	s	DIODE 1S2837-T1
D804	8-719-400-18	s	DIODE 1S2837-T1
D821	8-719-400-18	s	DIODE 1S2837-T1
D822	8-719-800-76	s	DIODE 1SS226
D823	8-719-800-76	s	DIODE 1SS226
D901	8-719-400-18	s	DIODE 1S2837-T1
DL501	1-415-517-21	s	DELAY LINE 1H/2H
DL700	1-415-154-00	s	DELAY LINE 35nS
FL301	1-236-370-11	s	FILTER, LOW-PASS
FL401	1-415-761-11	s	DELAY LINE
FL402	1-415-760-11	s	DELAY LINE
FL801	1-235-632-11	s	FILTER, BANDPASS 3.7MHz
FL802	1-235-633-11	s	FILTER, BANDPASS 5.17MHz
IC101	8-759-233-94	s	IC TA8607F

NOTE: Please see pages 14-15 thru 14-18 for the parts that are not listed in the parts list.

(HK-5 BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
IC102	8-759-925-60	s	IC BA401
IC301	8-752-003-00	s	IC CX20030
IC401	8-752-031-01	s	IC CXA1047M
IC501	8-752-003-12	s	IC CX20031
IC601	8-759-924-94	s	IC CX22021
IC602	8-752-003-22	s	IC CX20032
IC603	8-752-305-47	s	IC CX23054
IC604	8-759-009-51	s	IC MC14538BF
IC702	8-759-012-00	s	IC MC10H116M
IC703	8-752-006-12	s	IC CX20061
IC801	8-759-202-67	s	IC CX20117
IC901	8-759-925-74	s	IC SN74HC04NS
IC902	8-759-925-74	s	IC SN74HC04NS
L101	1-408-974-21	s	INDUCTOR 22uH
L102	1-410-167-41	s	INDUCTOR, CHIP 820uH
L103	1-408-792-00	s	INDUCTOR, CHIP 180uH
L104	1-408-777-00	s	INDUCTOR, CHIP 10uH
L105	1-408-770-11	s	INDUCTOR, CHIP 2.7uH
L106	1-408-775-21	s	INDUCTOR, CHIP 6.8uH
L107	1-408-775-21	s	INDUCTOR, CHIP 6.8uH
L108	1-408-780-21	s	INDUCTOR, CHIP 18uH
L109	1-408-797-11	s	INDUCTOR, CHIP 470uH
L111	1-408-797-11	s	INDUCTOR, CHIP 470uH
L112	1-408-797-11	s	INDUCTOR, CHIP 470uH
L113	1-408-777-00	s	INDUCTOR, CHIP 10uH
L114	1-408-779-31	s	INDUCTOR, CHIP 15uH
L115	1-408-780-21	s	INDUCTOR, CHIP 18uH
L201	1-408-982-11	s	INDUCTOR 100uH
L204	1-408-782-11	s	INDUCTOR, CHIP 27uH
L205	1-408-776-00	s	INDUCTOR, CHIP 8.2uH
L301	1-408-790-00	s	INDUCTOR, CHIP 120uH
L302	1-408-789-21	s	INDUCTOR, CHIP 100uH
L303	1-408-777-00	s	INDUCTOR, CHIP 10uH
L305	1-408-779-31	s	INDUCTOR, CHIP 15uH
L306	1-408-782-11	s	INDUCTOR, CHIP 27uH
L307	1-408-779-31	s	INDUCTOR, CHIP 15uH
L308	1-408-783-00	s	INDUCTOR, CHIP 33uH
L309	1-408-970-21	s	INDUCTOR 10uH
L310	1-408-982-11	s	INDUCTOR 100uH
L312	1-408-982-11	s	INDUCTOR 100uH
L401	1-408-782-11	s	INDUCTOR, CHIP 27uH
L402	1-408-970-21	s	INDUCTOR 10uH
L501	1-408-984-21	s	INDUCTOR 150uH
L502	1-408-781-00	s	INDUCTOR, CHIP 22uH
L503	1-408-765-21	s	INDUCTOR, CHIP 1uH
L504	1-408-765-21	s	INDUCTOR, CHIP 1uH
L505	1-408-776-00	s	INDUCTOR, CHIP 8.2uH
L506	1-408-982-11	s	INDUCTOR 100uH
L510	1-408-777-00	s	INDUCTOR, CHIP 10uH
L601	1-408-982-11	s	INDUCTOR 100uH
L602	1-408-792-00	s	INDUCTOR, CHIP 180uH
L603	1-408-781-00	s	INDUCTOR, CHIP 22uH
L604	1-408-789-21	s	INDUCTOR, CHIP 100uH
L605	1-408-790-00	s	INDUCTOR, CHIP 120uH
L606	1-408-793-21	s	INDUCTOR, CHIP 220uH
L701	1-408-780-21	s	INDUCTOR, CHIP 18uH
L702	1-408-795-21	s	INDUCTOR, CHIP 330uH
L705	1-408-978-21	s	INDUCTOR 47uH
L710	1-410-476-11	s	INDUCTOR 33uH
L801	1-408-781-00	s	INDUCTOR, CHIP 22uH
L802	1-408-982-11	s	INDUCTOR 100uH
L803	1-408-795-21	s	INDUCTOR, CHIP 330uH
LV501	1-404-594-11	s	COIL, VAR
Q101	8-729-200-86	s	TRANSISTOR 2SC2714-O
Q102	8-729-901-04	s	TRANSISTOR DTA114EK
Q103	8-729-200-86	s	TRANSISTOR 2SC2714-O
Q104	8-729-901-01	s	TRANSISTOR DTC144EK
Q105	8-729-904-07	s	TRANSISTOR FMG2
Q107	8-729-201-27	s	TRANSISTOR 2SC2715-Y
Q110	8-729-901-01	s	TRANSISTOR DTC144EK
Q111	8-729-200-86	s	TRANSISTOR 2SC2714-O
Q112	8-729-901-01	s	TRANSISTOR DTC144EK
Q113	8-729-200-86	s	TRANSISTOR 2SC2714-O
Q116	8-729-201-27	s	TRANSISTOR 2SC2715-Y
Q117	8-729-200-86	s	TRANSISTOR 2SC2714-O
Q118	8-729-200-86	s	TRANSISTOR 2SC2714-O
Q119	8-729-200-86	s	TRANSISTOR 2SC2714-O
Q120	8-729-200-86	s	TRANSISTOR 2SC2714-O
Q121	8-729-201-27	s	TRANSISTOR 2SC2715-Y
Q122	8-729-901-01	s	TRANSISTOR DTC144EK
Q123	8-729-901-01	s	TRANSISTOR DTC144EK
Q124	8-729-901-06	s	TRANSISTOR DTA144EK
Q125	8-729-901-01	s	TRANSISTOR DTC144EK
Q126	8-729-201-27	s	TRANSISTOR 2SC2715-Y
Q127	8-729-201-27	s	TRANSISTOR 2SC2715-Y
Q128	8-729-202-38	s	TRANSISTOR 2SC3326N
Q129	8-729-201-27	s	TRANSISTOR 2SC2715-Y
Q130	8-729-201-27	s	TRANSISTOR 2SC2715-Y
Q131	8-729-216-22	s	TRANSISTOR 2SA1162
Q132	8-729-201-27	s	TRANSISTOR 2SC2715-Y
Q181	8-729-907-46	s	TRANSISTOR IMZ1
Q182	8-729-903-10	s	TRANSISTOR FMW1
Q183	8-729-200-86	s	TRANSISTOR 2SC2714-O
Q184	8-729-216-22	s	TRANSISTOR 2SA1162
Q209	8-729-200-86	s	TRANSISTOR 2SC2714-O
Q210	8-729-200-86	s	TRANSISTOR 2SC2714-O
Q211	8-729-200-86	s	TRANSISTOR 2SC2714-O
Q212	8-729-901-01	s	TRANSISTOR DTC144EK
Q213	8-729-901-06	s	TRANSISTOR DTA144EK
Q214	8-729-200-86	s	TRANSISTOR 2SC2714-O
Q215	8-729-902-96	s	TRANSISTOR FMS1
Q217	8-729-200-86	s	TRANSISTOR 2SC2714-O
Q218	8-729-200-86	s	TRANSISTOR 2SC2714-O
Q301	8-729-201-27	s	TRANSISTOR 2SC2715-Y
Q302	8-729-201-27	s	TRANSISTOR 2SC2715-Y
Q305	8-729-201-27	s	TRANSISTOR 2SC2715-Y
Q306	8-729-201-27	s	TRANSISTOR 2SC2715-Y
Q307	8-729-201-27	s	TRANSISTOR 2SC2715-Y
Q309	8-729-201-27	s	TRANSISTOR 2SC2715-Y
Q310	8-729-201-27	s	TRANSISTOR 2SC2715-Y
Q311	8-729-201-27	s	TRANSISTOR 2SC2715-Y
Q312	8-729-901-06	s	TRANSISTOR DTA144EK
Q313	8-729-216-22	s	TRANSISTOR 2SA1162
Q314	8-729-201-27	s	TRANSISTOR 2SC2715-Y
Q315	8-729-201-27	s	TRANSISTOR 2SC2715-Y
Q316	8-729-901-01	s	TRANSISTOR DTC144EK

NOTE: Please see pages 14-15 thru 14-18 for the parts that are not listed in the parts list.

(HK-5 BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
Q317	8-729-201-27	s	TRANSISTOR 2SC2715-Y
Q318	8-729-901-06	s	TRANSISTOR DTA144EK
Q319	8-729-201-27	s	TRANSISTOR 2SC2715-Y
Q320	8-729-901-01	s	TRANSISTOR DTC144EK
Q321	8-729-901-01	s	TRANSISTOR DTC144EK
Q322	8-729-216-22	s	TRANSISTOR 2SA1162
Q323	8-729-901-01	s	TRANSISTOR DTC144EK
Q324	8-729-901-01	s	TRANSISTOR DTC144EK
Q325	8-729-901-06	s	TRANSISTOR DTA144EK
Q326	8-729-901-06	s	TRANSISTOR DTA144EK
Q327	8-729-201-27	s	TRANSISTOR 2SC2715-Y
Q328	8-729-201-27	s	TRANSISTOR 2SC2715-Y
Q330	8-729-901-06	s	TRANSISTOR DTA144EK
Q389	8-729-201-27	s	TRANSISTOR 2SC2715-Y
Q401	8-729-201-27	s	TRANSISTOR 2SC2715-Y
Q402	8-729-201-27	s	TRANSISTOR 2SC2715-Y
Q403	8-729-901-01	s	TRANSISTOR DTC144EK
Q404	8-729-901-01	s	TRANSISTOR DTC144EK
Q405	8-729-901-06	s	TRANSISTOR DTA144EK
Q406	8-729-201-27	s	TRANSISTOR 2SC2715-Y
Q407	8-729-216-22	s	TRANSISTOR 2SA1162
Q408	8-729-216-22	s	TRANSISTOR 2SA1162
Q409	8-729-201-27	s	TRANSISTOR 2SC2715-Y
Q410	8-729-216-22	s	TRANSISTOR 2SA1162
Q411	8-729-901-01	s	TRANSISTOR DTC144EK
Q412	8-729-901-01	s	TRANSISTOR DTC144EK
Q413	8-729-901-01	s	TRANSISTOR DTC144EK
Q414	8-729-201-27	s	TRANSISTOR 2SC2715-Y
Q415	8-729-216-22	s	TRANSISTOR 2SA1162
Q416	8-729-216-22	s	TRANSISTOR 2SA1162
Q417	8-729-901-01	s	TRANSISTOR DTC144EK
Q418	8-729-201-27	s	TRANSISTOR 2SC2715-Y
Q419	8-729-201-27	s	TRANSISTOR 2SC2715-Y
Q420	8-729-202-38	s	TRANSISTOR 2SC3326N
Q421	8-729-202-38	s	TRANSISTOR 2SC3326N
Q422	8-729-201-27	s	TRANSISTOR 2SC2715-Y
	201-27	s	TRANSISTOR 2SC2715-Y
Q424	8-729-901-01	s	TRANSISTOR DTC144EK
Q425	8-729-201-27	s	TRANSISTOR 2SC2715-Y
Q426	8-729-201-27	s	TRANSISTOR 2SC2715-Y
Q427	8-729-216-22	s	TRANSISTOR 2SA1162
Q428	8-729-216-22	s	TRANSISTOR 2SA1162
Q429	8-729-901-01	s	TRANSISTOR DTC144EK
Q430	8-729-901-01	s	TRANSISTOR DTC144EK
Q431	8-729-216-22	s	TRANSISTOR 2SA1162
Q501	8-729-901-06	s	TRANSISTOR DTA144EK
Q502	8-729-901-01	s	TRANSISTOR DTC144EK
Q503	8-729-901-00	s	TRANSISTOR DTC124EK
Q504	8-729-201-27	s	TRANSISTOR 2SC2715-Y
Q601	8-729-901-01	s	TRANSISTOR DTC144EK
Q603	8-729-901-01	s	TRANSISTOR DTC144EK
Q604	8-729-201-27	s	TRANSISTOR 2SC2715-Y
Q605	8-729-201-27	s	TRANSISTOR 2SC2715-Y
Q606	8-729-901-01	s	TRANSISTOR DTC144EK
Q607	8-72		
Q608	8-729-216-22	s	TRANSISTOR 2SA1162
Q609	8-729-901-00	s	TRANSISTOR DTC124EK
Q610	8-729-904-04	s	TRANSISTOR FMS2

NOTE : Please see pages 14-15 thru 14-18 for the parts that are not listed in the parts list.

(HK-5 BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
Q611	8-729-201-27	s	TRANSISTOR 2SC2715-Y
Q612	8-729-201-27	s	TRANSISTOR 2SC2715-Y
Q613	8-729-900-89	s	TRANSISTOR DTC144ES
Q701	8-729-201-27	s	TRANSISTOR 2SC2715-Y
Q702	8-729-202-38	s	TRANSISTOR 2SC3326N
Q703	8-729-202-38	s	TRANSISTOR 2SC3326N
Q704	8-729-216-22	s	TRANSISTOR 2SA1162
Q706	8-729-201-27	s	TRANSISTOR 2SC2715-Y
Q707	8-729-201-27	s	TRANSISTOR 2SC2715-Y
Q710	8-729-901-01	s	TRANSISTOR DTC144EK
Q711	8-729-901-01	s	TRANSISTOR DTC144EK
Q712	8-729-901-01	s	TRANSISTOR DTC144EK
Q720	8-729-200-86	s	TRANSISTOR 2SC2714-O
Q721	8-729-200-86	s	TRANSISTOR 2SC2714-O
Q722	8-729-200-86	s	TRANSISTOR 2SC2714-O
Q723	8-729-201-27	s	TRANSISTOR 2SC2715-Y
Q724	8-729-901-01	s	TRANSISTOR DTC144EK
Q801	8-729-901-01	s	TRANSISTOR DTC144EK
Q802	8-729-201-27	s	TRANSISTOR 2SC2715-Y
Q803	8-729-201-27	s	TRANSISTOR 2SC2715-Y
Q804	8-729-201-27	s	TRANSISTOR 2SC2715-Y
Q805	8-729-216-22	s	TRANSISTOR 2SA1162
Q811	8-729-901-01	s	TRANSISTOR DTC144EK
Q901	8-729-901-01	s	TRANSISTOR DTC144EK
Q902	8-729-901-01	s	TRANSISTOR DTC144EK
Q903	8-729-104-25	s	TRANSISTOR 2SB804-AV
Q904	8-729-201-27	s	TRANSISTOR 2SC2715-Y
R115	1-216-639-11	s	METAL, CHIP 330 0.5% 1/10W
R116	1-216-635-11	s	METAL, CHIP 220 0.5% 1/10W
R142	1-216-748-11	s	METAL, CHIP 39K 1% 1/10W
R146	1-216-645-11	s	METAL, CHIP 560 0.5% 1/10W
R160	1-216-643-11	s	METAL, CHIP 470 0.5% 1/10W
R171	1-216-748-11	s	METAL, CHIP 39K 1% 1/10W
R174	1-216-748-11	s	METAL, CHIP 39K 1% 1/10W
R195	1-216-748-11	s	METAL, CHIP 39K 1% 1/10W
R201	1-216-641-11	s	METAL, CHIP 390 0.5% 1/10W
R202	1-215-397-00	s	METAL 100 1% 1/6W
R233	1-216-064-00	s	METAL, CHIP 4.3K 5% 1/10W
R243	1-216-643-11	s	METAL, CHIP 470 0.5% 1/10W
R244	1-216-673-11	s	METAL, CHIP 8.2K 0.5% 1/10W
R302	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R303	1-216-659-11	s	METAL, CHIP 2.2K 0.5% 1/10W
R304	1-216-673-11	s	METAL, CHIP 8.2K 0.5% 1/10W
R305	1-216-677-11	s	METAL, CHIP 12K 0.5% 1/10W
R313	1-216-633-11	s	METAL, CHIP 180 0.5% 1/10W
R316	1-216-673-11	s	METAL, CHIP 8.2K 0.5% 1/10W
R317	1-216-670-11	s	METAL, CHIP 6.2K 0.5% 1/10W
R321	1-216-032-00	s	METAL, CHIP 200 5% 1/10W
R323	1-216-643-11	s	METAL, CHIP 470 0.5% 1/10W
R329	1-216-653-11	s	METAL, CHIP 1.2K 0.5% 1/10W
R332	1-216-645-11	s	METAL, CHIP 560 0.5% 1/10W
R333	1-216-623-11	s	METAL, CHIP 68 0.5% 1/10W
R340	1-216-653-11	s	METAL, CHIP 1.2K 0.5% 1/10W
R341	1-216-641-11	s	METAL, CHIP 390 0.5% 1/10W
R365	1-216-667-11	s	METAL, CHIP 4.7K 0.5% 1/10W
R403	1-216-667-11	s	METAL, CHIP 4.7K 0.5% 1/10W
R404	1-216-654-11	s	METAL, CHIP 1.3K 0.5% 1/10W
R409	1-216-653-11	s	METAL, CHIP 1.2K 0.5% 1/10W

(HK-5 BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
R428	1-216-748-11	s	METAL, CHIP 39K 1% 1/10W
R435	1-216-693-11	s	METAL, CHIP 56K 0.5% 1/10W
R436	1-216-663-11	s	METAL, CHIP 3.3K 0.5% 1/10W
R437	1-216-667-11	s	METAL, CHIP 4.7K 0.5% 1/10W
R438	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R439	1-216-666-11	s	METAL, CHIP 4.3K 0.5% 1/10W
R441	1-216-666-11	s	METAL, CHIP 4.3K 0.5% 1/10W
R446	1-216-665-11	s	METAL, CHIP 3.9K 0.5% 1/10W
R447	1-216-679-11	s	METAL, CHIP 15K 0.5% 1/10W
R451	1-216-643-11	s	METAL, CHIP 470 0.5% 1/10W
R452	1-216-643-11	s	METAL, CHIP 470 0.5% 1/10W
R453	1-216-659-11	s	METAL, CHIP 2.2K 0.5% 1/10W
R454	1-216-663-11	s	METAL, CHIP 3.3K 0.5% 1/10W
R455	1-216-653-11	s	METAL, CHIP 1.2K 0.5% 1/10W
R466	1-216-643-11	s	METAL, CHIP 470 0.5% 1/10W
R467	1-216-641-11	s	METAL, CHIP 390 0.5% 1/10W
R475	1-216-058-00	s	METAL, CHIP 2.4K 5% 1/10W
R483	1-216-082-00	s	METAL, CHIP 24K 5% 1/10W
R501	1-216-643-11	s	METAL, CHIP 470 0.5% 1/10W
R502	1-216-665-11	s	METAL, CHIP 3.9K 0.5% 1/10W
R503	1-216-643-11	s	METAL, CHIP 470 0.5% 1/10W
R504	1-216-661-11	s	METAL, CHIP 2.7K 0.5% 1/10W
R505	1-216-653-11	s	METAL, CHIP 1.2K 0.5% 1/10W
R510	1-216-667-11	s	METAL, CHIP 4.7K 0.5% 1/10W
R511	1-216-647-11	s	METAL, CHIP 680 0.5% 1/10W
R512	1-216-667-11	s	METAL, CHIP 4.7K 0.5% 1/10W
R513	1-216-645-11	s	METAL, CHIP 560 0.5% 1/10W
R514	1-216-679-11	s	METAL, CHIP 15K 0.5% 1/10W
R515	1-216-699-11	s	METAL, CHIP 100K 0.5% 1/10W
R516	1-216-659-11	s	METAL, CHIP 2.2K 0.5% 1/10W
R517	1-216-641-11	s	METAL, CHIP 390 0.5% 1/10W
R522	1-216-748-11	s	METAL, CHIP 39K 1% 1/10W
R530	1-216-629-11	s	METAL, CHIP 120 0.5% 1/10W
R531	1-216-627-11	s	METAL, CHIP 100 0.5% 1/10W
R532	1-216-611-11	s	METAL, CHIP 22 0.5% 1/10W
R537	1-216-641-11	s	METAL, CHIP 390 0.5% 1/10W
R541	1-216-629-11	s	METAL, CHIP 120 0.5% 1/10W
R542	1-216-637-11	s	METAL, CHIP 270 0.5% 1/10W
R543	1-216-748-11	s	METAL, CHIP 39K 1% 1/10W
R544	1-216-748-11	s	METAL, CHIP 39K 1% 1/10W
R603	1-216-639-11	s	METAL, CHIP 330 0.5% 1/10W
R605	1-216-669-11	s	METAL, CHIP 5.6K 0.5% 1/10W
R606	1-216-683-11	s	METAL, CHIP 22K 0.5% 1/10W
R607	1-216-667-11	s	METAL, CHIP 4.7K 0.5% 1/10W
R613	1-216-655-11	s	METAL, CHIP 1.5K 0.5% 1/10W
R614	1-216-667-11	s	METAL, CHIP 4.7K 0.5% 1/10W
R618	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R629	1-216-667-11	s	METAL, CHIP 4.7K 0.5% 1/10W
R632	1-216-645-11	s	METAL, CHIP 560 0.5% 1/10W
R633	1-216-659-11	s	METAL, CHIP 2.2K 0.5% 1/10W
R640	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R641	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R663	1-216-667-11	s	METAL, CHIP 4.7K 0.5% 1/10W
R664	1-216-655-11	s	METAL, CHIP 1.5K 0.5% 1/10W
R675	1-216-106-00	s	METAL, CHIP 240K 5% 1/10W
R676	1-216-106-00	s	METAL, CHIP 240K 5% 1/10W
R678	1-249-429-11	s	CARBON 10K 5% 1/4W
R704	1-216-645-11	s	METAL, CHIP 560 0.5% 1/10W
R705	1-216-635-11	s	METAL, CHIP 220 0.5% 1/10W
R707	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R709	1-216-673-11	s	METAL, CHIP 8.2K 0.5% 1/10W
R710	1-216-643-11	s	METAL, CHIP 470 0.5% 1/10W
R711	1-216-645-11	s	METAL, CHIP 560 0.5% 1/10W
R748	1-249-405-11	s	CARBON 100 5% 1/4W
R761	1-216-034-00	s	METAL, CHIP 240 5% 1/10W
R774	1-216-660-11	s	METAL, CHIP 2.4K 0.5% 1/10W
RV101	1-230-869-11	s	RES, ADJ, METAL 4.7K
RV201	1-230-867-11	s	RES, ADJ, METAL 1K
RV202	1-230-868-11	s	RES, ADJ, METAL 2.2K
RV301	1-230-869-11	s	RES, ADJ, METAL 4.7K
RV302	1-230-870-11	s	RES, ADJ, METAL 10K
RV303	1-230-870-11	s	RES, ADJ, METAL 10K
RV304	1-230-870-11	s	RES, ADJ, METAL 10K
RV305	1-230-875-21	s	RES, ADJ, METAL 220K
RV401	1-230-873-11	s	RES, ADJ, METAL 47K
RV402	1-230-869-11	s	RES, ADJ, METAL 4.7K
RV403	1-230-868-11	s	RES, ADJ, METAL 2.2K
RV404	1-230-868-11	s	RES, ADJ, METAL 2.2K
RV405	1-230-866-11	s	RES, ADJ, METAL 470
RV501	1-230-870-11	s	RES, ADJ, METAL 10K
RV502	1-230-870-11	s	RES, ADJ, METAL 10K
RV601	1-230-871-11	s	RES, ADJ, METAL 22K
RV602	1-230-870-11	s	RES, ADJ, METAL 10K
RV700	1-230-868-11	s	RES, ADJ, METAL 2.2K
RV801	1-230-873-11	s	RES, ADJ, METAL 47K
RV802	1-230-875-21	s	RES, ADJ, METAL 220K
T101	1-409-466-21	s	TRAP 1.5/1.7MHz
T501	1-235-437-11	s	FILTER, BANDPASS 4.43MHz
T601	1-409-396-11	s	TRAP, CHROMA
T602	1-409-394-11	s	TRAP, CHROMA 4.43MHz
X501	1-567-347-11	s	RESONATOR, CERAMIC 13.301MHz
X601	1-567-504-11	s	CRYSTAL 4.433619MHz
X602	1-567-827-11	s	CRYSTAL 5.85938MHz

HP-42 BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	1-629-477-11	o	PRINTED CIRCUIT BOARD, HP-42
C1	1-161-379-00	s	CERAMIC 0.01uF 20% 25V
CN1011	1-507-854-00	s	JACK, PHONE
R1	1-249-406-11	s	CARBON 120 5% 1/4W
R2	1-249-406-11	s	CARBON 120 5% 1/4W
RV1	1-237-703-11	s	RES, VAR CARBON 2K/2K

NOTE: Please see pages 14-15 thru 14-18 for the parts that are not listed in the parts list.

IG-4 BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	A-7070-955-A	o	MOUNTED CIRCUIT BOARD, IG-4

All of the component parts on the IG-4 Board are supplied togither with when you order SE-10(P) Board.

Ref. No. or Q'ty	Part No.	SP	Description
C024	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C025	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C026	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C027	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
CN004	1-566-945-11	s	CONNECTOR, BOARD TO BOARD 18P
CN005	1-566-946-11	s	CONNECTOR, BOARD TO BOARD 22P
CN006	1-566-945-11	s	CONNECTOR, BOARD TO BOARD 18P
CN007	1-566-945-11	s	CONNECTOR, BOARD TO BOARD 18P

KY-162 BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	A-7061-779-A	o	MOUNTED CIRCUIT BOARD, KY-162
1pc	3-718-657-01	o	HOLDER, LED
BT1	⚠1-528-229-11	o	BATTERY, LITHIUM CR-2450
C2	1-162-210-31	s	CERAMIC 30PF 5% 50V
C3	1-162-210-31	s	CERAMIC 30PF 5% 50V
C4	1-130-491-00	s	MYLAR 0.047uF 5% 50V
C6	1-126-176-11	s	ELECT 220uF 20% 10V
C7	1-130-491-00	s	MYLAR 0.047uF 5% 50V
C8	1-125-513-11	s	DOUBLE LAYERS 0.047 FARAD 5.5V
C9	1-126-094-11	s	ELECT 4.7uF 20% 35V
C10	1-161-379-00	s	CERAMIC 0.01uF 20% 25V
C11	1-130-491-00	s	MYLAR 0.047uF 5% 50V
C12	1-162-210-31	s	CERAMIC 30PF 5% 50V
C13	1-162-210-31	s	CERAMIC 30PF 5% 50V
C14	1-130-491-00	s	MYLAR 0.047uF 5% 50V
C16	1-130-491-00	s	MYLAR 0.047uF 5% 50V
C17	1-126-094-11	s	ELECT 4.7uF 20% 35V
C18	1-102-106-00	s	CERAMIC 100PF 10% 50V
D1	8-719-911-19	s	DIODE 1SS119
D10	8-719-911-19	s	DIODE 1SS119
D12	8-719-911-19	s	DIODE 1SS119
D14	8-719-911-19	s	DIODE 1SS119
D15	8-719-911-19	s	DIODE 1SS119
D16	8-719-911-19	s	DIODE 1SS119
D17	8-719-911-19	s	DIODE 1SS119
D18	8-719-911-19	s	DIODE 1SS119
D19	8-719-911-19	s	DIODE 1SS119
D23	8-719-911-19	s	DIODE 1SS119
D24	8-719-911-19	s	DIODE 1SS119
D29	⚠8-719-104-10	s	DIODE 1SS99
D45	8-719-911-19	s	DIODE 1SS119
D46	8-719-911-19	s	DIODE 1SS119
D48	8-719-200-02	s	DIODE 10E2
D49	8-719-911-19	s	DIODE 1SS119
D51	⚠8-719-104-10	s	DIODE 1SS99
D52	8-719-911-19	s	DIODE 1SS119
D54	8-719-911-19	s	DIODE 1SS119
D55	8-719-911-19	s	DIODE 1SS119
D102	8-719-802-11	s	LED TLUG154, GRN
D104	8-719-939-39	s	LED GL5HD8, RED
D108	8-719-939-39	s	LED GL5HD8, RED
D109	8-719-939-39	s	LED GL5HD8, RED
D110	8-719-939-39	s	LED GL5HD8, RED
D111	8-719-939-39	s	LED GL5HD8, RED
D112	8-719-939-39	s	LED GL5HD8, RED
D113	8-719-939-39	s	LED GL5HD8, RED
D114	8-719-820-28	s	LED TLG-256, GRN
D115	8-719-820-28	s	LED TLG-256, GRN
D116	8-719-939-39	s	LED GL5HD8, RED
D117	8-719-802-11	s	LED TLUG154, GRN
IC1	8-759-605-23	s	IC M50747H-601SP
IC4	8-759-645-16	s	IC M54516P
IC5	8-759-600-68	s	IC M54562P
IC6	8-759-982-21	s	IC RC78L05A
IC7	8-759-937-29	s	IC MB88201H-539N
Q2	8-729-900-67	s	TRANSISTOR DTA124XS
Q3	8-729-900-67	s	TRANSISTOR DTA124XS

Note: Please see pages 14-15 thru 14-18 for the parts that are not listed in the parts list.

(KY-162 BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
Q4	8-729-900-67	s	TRANSISTOR DTA124XS
Q5	8-729-281-52	s	TRANSISTOR 2SC1815-Y
Q6	8-729-281-52	s	TRANSISTOR 2SC1815-Y
Q15	8-729-900-89	s	TRANSISTOR DTC144ES
R8	1-249-417-11	s	CARBON 1K 5% 1/4W
R9	1-249-417-11	s	CARBON 1K 5% 1/4W
R10	1-249-417-11	s	CARBON 1K 5% 1/4W
R11	1-249-417-11	s	CARBON 1K 5% 1/4W
R12	1-249-417-11	s	CARBON 1K 5% 1/4W
R13	1-249-417-11	s	CARBON 1K 5% 1/4W
R14	1-249-417-11	s	CARBON 1K 5% 1/4W
R15	1-249-417-11	s	CARBON 1K 5% 1/4W
R16	1-249-436-11	s	CARBON 39K 5% 1/4W
R17	1-249-436-11	s	CARBON 39K 5% 1/4W
R18	1-249-436-11	s	CARBON 39K 5% 1/4W
R19	1-249-436-11	s	CARBON 39K 5% 1/4W
R20	1-249-436-11	s	CARBON 39K 5% 1/4W
R21	1-249-436-11	s	CARBON 39K 5% 1/4W
R22	1-249-436-11	s	CARBON 39K 5% 1/4W
R23	1-249-436-11	s	CARBON 39K 5% 1/4W
R25	1-249-404-00	s	CARBON 82 5% 1/4W
R26	1-249-404-00	s	CARBON 82 5% 1/4W
R27	1-249-404-00	s	CARBON 82 5% 1/4W
R29	1-249-404-00	s	CARBON 82 5% 1/4W
R30	1-249-404-00	s	CARBON 82 5% 1/4W
R31	1-249-404-00	s	CARBON 82 5% 1/4W
R32	1-247-903-00	s	CARBON 1M 5% 1/4W
R33	1-249-422-11	s	CARBON 2.7K 5% 1/4W
R34	1-249-433-11	s	CARBON 22K 5% 1/4W
R35	1-249-433-11	s	CARBON 22K 5% 1/4W
R36	1-249-425-11	s	CARBON 4.7K 5% 1/4W
R37	1-249-422-11	s	CARBON 2.7K 5% 1/4W
R38	1-249-429-11	s	CARBON 10K 5% 1/4W
R39	1-249-437-11	s	CARBON 47K 5% 1/4W
R40	1-249-437-11	s	CARBON 47K 5% 1/4W
R41	1-249-429-11	s	CARBON 10K 5% 1/4W
R44	1-249-413-11	s	CARBON 470 5% 1/4W
R45	1-249-421-11	s	CARBON 2.2K 5% 1/4W
R48	1-249-437-11	s	CARBON 47K 5% 1/4W
R49	1-249-429-11	s	CARBON 10K 5% 1/4W
R50	1-249-417-11	s	CARBON 1K 5% 1/4W
R51	1-249-417-11	s	CARBON 1K 5% 1/4W
R52	1-249-417-11	s	CARBON 1K 5% 1/4W
R53	1-249-417-11	s	CARBON 1K 5% 1/4W
R54	1-249-429-11	s	CARBON 10K 5% 1/4W
R55	1-249-429-11	s	CARBON 10K 5% 1/4W
R56	1-249-429-11	s	CARBON 10K 5% 1/4W
R57	1-249-429-11	s	CARBON 10K 5% 1/4W
R58	1-249-423-11	s	CARBON 3.3K 5% 1/4W
R59	1-249-429-11	s	CARBON 10K 5% 1/4W
R73	1-249-429-11	s	CARBON 10K 5% 1/4W
R75	1-249-433-11	s	CARBON 22K 5% 1/4W
R84	1-249-429-11	s	CARBON 10K 5% 1/4W
R85	1-249-429-11	s	CARBON 10K 5% 1/4W
R86	1-249-417-11	s	CARBON 1K 5% 1/4W
R87	1-249-429-11	s	CARBON 10K 5% 1/4W
R88	1-249-423-11	s	CARBON 3.3K 5% 1/4W
R89	1-249-429-11	s	CARBON 10K 5% 1/4W
R96	1-249-429-11	s	CARBON 10K 5% 1/4W

(KY-162 BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
R97	1-249-437-11	s	CARBON 47K 5% 1/4W
R98	1-249-401-11	s	CARBON 47 5% 1/4W
R99	1-249-401-11	s	CARBON 47 5% 1/4W
R101	1-249-403-11	s	CARBON 68 5% 1/4W
RB1	1-231-410-00	s	RESISTOR BLOCK 10Kx8
RB2	1-231-410-00	s	RESISTOR BLOCK 10Kx8
S1	1-552-539-00	s	SWITCH, TACTILE
S10	1-552-539-00	s	SWITCH, TACTILE
S12	1-552-539-00	s	SWITCH, TACTILE
S14	1-552-539-00	s	SWITCH, TACTILE
S15	1-552-539-00	s	SWITCH, TACTILE
S16	1-552-539-00	s	SWITCH, TACTILE
S17	1-552-539-00	s	SWITCH, TACTILE
S18	1-552-539-00	s	SWITCH, TACTILE
S19	1-552-539-00	s	SWITCH, TACTILE
S23	1-552-539-00	s	SWITCH, TACTILE
S24	1-552-539-00	s	SWITCH, TACTILE
S29	1-552-539-00	s	SWITCH, TACTILE
X1	1-567-869-11	s	RESONATOR, CERAMIC 9.83MHz
X2	1-567-192-11	s	RESONATOR, CERAMIC 4.00MHz

LD-1 BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	A-7070-024-A	o	MOUNTED CIRCUIT BOARD, LD-1
1pc	1-613-367-11	o	PRINTED CIRCUIT BOARD, LD-1
D901	8-719-928-54	s	DIODE GL-450S

NOTE: Please see pages 14-15 thru 14-18 for the parts that are not listed in the parts list.

LP-52 BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	A-7061-770-A	o	MOUNTED CIRCUIT BOARD, LP-52
D1	8-719-901-65	s	DIODE LT-9200H
D2	8-719-820-72	s	DIODE TLUY144
D3	8-719-901-65	s	DIODE LT-9200H
D4	8-719-820-73	s	DIODE TLUG144
D5	8-719-901-66	s	DIODE LT-9200N
D6	8-719-820-72	s	DIODE TLUY144
D7	8-719-901-66	s	DIODE LT-9200N
R1	1-249-404-00	s	CARBON 82 5% 1/4W
R2	1-249-404-00	s	CARBON 82 5% 1/4W
R3	1-249-403-11	s	CARBON 68 5% 1/4W
R4	1-249-404-00	s	CARBON 82 5% 1/4W
R5	1-249-404-00	s	CARBON 82 5% 1/4W
R6	1-249-403-11	s	CARBON 68 5% 1/4W
R7	1-249-404-00	s	CARBON 82 5% 1/4W
R8	1-249-404-00	s	CARBON 82 5% 1/4W
R9	1-249-404-00	s	CARBON 82 5% 1/4W
R10	1-249-404-00	s	CARBON 82 5% 1/4W

MB-19 BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	A-7061-824-A	o	MOUNTED CIRCUIT BOARD, MB-19

This board includes PA-27 and PD-19 Boards.

Ref. No. or Q'ty	Part No.	SP	Description
1pc	4-911-047-01	o	VIBRATION CONTROL (D)
C609	1-124-234-00	s	ELECT 22uF 20% 16V
C652	1-124-234-00	s	ELECT 22uF 20% 16V
C662	1-124-234-00	s	ELECT 22uF 20% 16V
C671	1-124-225-00	s	ELECT 100uF 20% 6.3V
C672	1-135-091-00	s	TANTALUN, CHIP 1uF 10% 16V
C673	1-124-225-00	s	ELECT 100uF 20% 6.3V
C674	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C676	1-124-225-00	s	ELECT 100uF 20% 6.3V
C678	1-124-225-00	s	ELECT 100uF 20% 6.3V
C679	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C680	1-135-155-21	s	TANTAL CHIP 4.7uF 10% 16V
C681	1-124-225-00	s	ELECT 100uF 20% 6.3V
C682	1-135-157-21	s	TANTALUM, CHIP 10uF 20% 6.3V
C683	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
CN601	1-566-943-11	s	CONNECTOR, BOARD TO BOARD 18P
CN602	1-566-944-11	s	CONNECTOR, BOARD TO BOARD 22P
D601	8-719-104-34	s	DIODE 1S2835
D602	8-719-104-34	s	DIODE 1S2835
D603	8-719-104-34	s	DIODE 1S2835
D604	8-719-400-18	s	DIODE 1S2837-T1
D641	8-719-800-76	s	DIODE 1SS226
D642	8-719-800-76	s	DIODE 1SS226
IC601	8-759-149-34	s	IC UPD75106G-591-1B
IC603	8-759-208-11	s	IC TC4053BFHB
IC651	8-759-603-27	s	IC M5201FP
IC661	8-759-603-27	s	IC M5201FP
IC671	8-741-150-50	s	IC SBX1505-01
L601	1-408-970-21	s	INDUCTOR 10uH
L602	1-408-970-21	s	INDUCTOR 10uH
L603	1-408-970-21	s	INDUCTOR 10uH
L604	1-408-948-00	s	INDUCTOR 220uH
L605	1-408-948-00	s	INDUCTOR 220uH
L641	1-410-393-11	s	INDUCTOR, CHIP 100uH
L671	1-408-948-00	s	INDUCTOR 220uH
Q601	8-729-901-06	s	TRANSISTOR DTA144EK
Q602	8-729-901-01	s	TRANSISTOR DTC144EK
Q603	8-729-901-01	s	TRANSISTOR DTC144EK
Q604	8-729-901-01	s	TRANSISTOR DTC144EK
Q605	8-729-901-06	s	TRANSISTOR DTA144EK
Q606	8-729-901-06	s	TRANSISTOR DTA144EK
Q607	8-729-901-01	s	TRANSISTOR DTC144EK
Q608	8-729-901-01	s	TRANSISTOR DTC144EK
Q609	8-729-901-06	s	TRANSISTOR DTA144EK
Q671	8-729-100-66	s	TRANSISTOR 2SC1623
R641	1-216-072-00	s	METAL, CHIP 9.1K 5% 1/10W
R645	1-216-072-00	s	METAL, CHIP 9.1K 5% 1/10W
R673	1-216-052-00	s	METAL, CHIP 1.3K 5% 1/10W
S641	1-554-371-51	s	SWITCH, TACTILE
S642	1-554-371-51	s	SWITCH, TACTILE
S643	1-554-371-51	s	SWITCH, TACTILE
S644	1-554-371-51	s	SWITCH, TACTILE
S645	1-554-371-51	s	SWITCH, TACTILE

NOTE: Please see pages 14-15 thru 14-18 for the parts that are not listed in the parts list.

(MB-19 BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
S646	1-554-371-51	s	SWITCH, TACTILE
S647	1-554-371-51	s	SWITCH, TACTILE
S648	1-570-909-21	s	SWITCH, PUSH
S649	1-554-371-51	s	SWITCH, TACTILE
T603	1-235-398-11	s	FILTER, BANDPASS
T651	1-235-900-11	s	FILTER, LOW-PASS
T661	1-235-900-11	s	FILTER, LOW-PASS
X601	1-567-121-00	s	CRYSTAL, 4.194304MHz

MC-28 BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	1-622-222-11	o	PRINTED CIRCUIT BOARD, MC-28
C1	1-161-379-00	s	CERAMIC 0.01uF 20% 25V
C2	1-161-379-00	s	CERAMIC 0.01uF 20% 25V
CN1009	1-507-797-21	s	JACK, PIN 2P, FEMALE

MD-23(P) BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	A-7062-168-A	o	MOUNTED CIRCUIT BOARD, MD-23 (P)

This board includes FP-122 and FP-84 Boards.

Ref. No. or Q'ty	Part No.	SP	Description
C801	1-124-465-00	s	ELECT 0.47uF 20% 50V
C802	1-124-464-11	s	ELECT 0.22MF 20% 50V
C804	1-126-160-11	s	ELECT 1uF 20% 50V
C806	1-126-151-11	s	ELECT, NONPOLAR 4.7uF 20% 16V
C808	1-126-162-11	s	ELECT 3.3uF 20% 50V
C809	1-124-584-00	s	ELECT 100uF 20% 10V
C810	1-126-096-11	s	ELECT 10uF 20% 35V
C811	1-126-096-11	s	ELECT 10uF 20% 35V
C812	1-126-096-11	s	ELECT 10uF 20% 35V
C813	1-126-160-11	s	ELECT 1uF 20% 50V
C814	1-126-160-11	s	ELECT 1uF 20% 50V
C815	1-126-160-11	s	ELECT 1uF 20% 50V
C816	1-124-229-00	s	ELECT 33uF 20% 10V
C817	1-124-229-00	s	ELECT 33uF 20% 10V
C818	1-124-229-00	s	ELECT 33uF 20% 10V
C821	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C822	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C825	1-126-162-11	s	ELECT 3.3uF 20% 50V
C835	1-126-501-11	s	ELECT, NONPOLAR 0.15uF 20% 50V
C836	1-164-157-11	s	CERAMIC, CHIP 0.068uF 10% 25V
C837	1-124-464-11	s	ELECT 0.22MF 20% 50V
C838	1-124-589-11	s	ELECT 47uF 20% 16V
C839	1-126-529-11	s	ELECT, NONPOLAR 0.47uF 20% 50V
C840	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C841	1-124-589-11	s	ELECT 47uF 20% 16V
C901	1-124-234-00	s	ELECT 22uF 20% 16V
C902	1-124-234-00	s	ELECT 22uF 20% 16V
C903	1-124-234-00	s	ELECT 22uF 20% 16V
C904	1-124-234-00	s	ELECT 22uF 20% 16V
C905	1-124-257-00	s	ELECT 2.2uF 20% 50V
C906	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C908	1-126-096-11	s	ELECT 10uF 20% 35V
C909	1-163-077-00	s	CERAMIC, CHIP 0.1uF 25V
C910	1-130-491-00	s	MYLAR 0.047uF 5% 50V
C911	1-130-491-00	s	MYLAR 0.047uF 5% 50V
C912	1-130-483-00	s	MYLAR 0.01uF 5% 50V
C913	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C914	1-124-589-11	s	ELECT 47uF 20% 16V
C915	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C916	1-126-530-11	s	ELECT, NONPOLAR 22uF 20% 10V
C917	1-126-530-11	s	ELECT, NONPOLAR 22uF 20% 10V
C918	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C919	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C950	1-164-157-11	s	CERAMIC, CHIP 0.068uF 10% 25V
CN807	1-566-527-11	s	CONNECTOR, FPC 11P
CN808	1-566-531-11	s	CONNECTOR, FPC 15P
CN809	1-566-945-11	s	CONNECTOR, BOARD TO BOARD 18P
CN810	1-566-946-11	s	CONNECTOR, BOARD TO BOARD 22P
CN811	1-566-367-11	o	CONNECTOR, EL-BOW 18P, FEMALE
CN812	1-566-942-11	s	CONNECTOR, EL-BOW, 30P, FEMALE
CN814	1-566-367-11	o	CONNECTOR, EL-BOW 18P, FEMALE
D803	8-719-200-27	s	DIODE E10DS2
D810	8-719-400-18	s	DIODE 1S2837-T1
D811	8-719-200-27	s	DIODE E10DS2
D901	8-719-400-18	s	DIODE 1S2837-T1

NOTE: Please see pages 14-15 thru 14-18 for the parts that are not listed in the parts list.

(MD-23(P) BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
D902	8-719-400-18	s	DIODE 1S2837-T1
D903	8-719-400-18	s	DIODE 1S2837-T1
D904	8-719-800-76	s	DIODE 1SS226
D905	8-719-400-18	s	DIODE 1S2837-T1
IC801	8-752-037-08	s	IC CXA1109M
IC802	8-759-802-79	s	IC LB1616M
IC804	8-759-981-82	s	IC RC3414M
IC805	8-759-100-93	s	IC UPC393G2
IC806	8-759-207-00	s	IC TA7733F
IC807	8-759-107-68	s	IC CX20115A
IC808	8-759-700-62	s	IC NJM4562D
IC809	8-759-100-94	s	IC UPC358G2
IC901	8-759-207-50	s	IC TA7745F
IC902	8-759-100-95	s	IC UPC324G2
IC903	8-759-925-66	s	IC BA6303F
IC904	8-759-208-15	s	IC TC4066BFHB
PS801	⚠1-532-685-00	s	LINK, IC 0.8A
Q806	8-729-111-14	s	TRANSISTOR 2SA1385-Z-L
Q807	8-729-901-06	s	TRANSISTOR DTA144EK
Q809	8-729-143-91	s	TRANSISTOR 2SC3518-ZL
Q810	8-729-805-25	s	TRANSISTOR 2SB1121-S
Q811	8-729-805-25	s	TRANSISTOR 2SB1121-S
Q812	8-729-111-14	s	TRANSISTOR 2SA1385-Z-L
Q813	8-729-100-66	s	TRANSISTOR 2SC1623
Q820	8-729-143-91	s	TRANSISTOR 2SC3518-ZL
Q821	8-729-100-66	s	TRANSISTOR 2SC1623
Q880	8-729-100-66	s	TRANSISTOR 2SC1623
Q901	8-729-920-82	s	TRANSISTOR 2SB1188-QR
Q902	8-729-920-82	s	TRANSISTOR 2SB1188-QR
Q903	8-729-920-82	s	TRANSISTOR 2SB1188-QR
Q904	8-729-901-06	s	TRANSISTOR DTA144EK
Q905	8-729-901-06	s	TRANSISTOR DTA144EK
Q906	8-729-901-01	s	TRANSISTOR DTC144EK
Q907	8-729-901-01	s	TRANSISTOR DTC144EK
Q908	8-729-901-01	s	TRANSISTOR DTC144EK
Q909	8-729-901-06	s	TRANSISTOR DTA144EK
Q950	8-729-903-97	s	TRANSISTOR FMS1FE
R832	1-216-304-11	s	METAL, CHIP 3.3 5% 1/10W
R833	1-216-304-11	s	METAL, CHIP 3.3 5% 1/10W
R834	1-216-304-11	s	METAL, CHIP 3.3 5% 1/10W
R890	1-216-681-11	s	METAL, CHIP 18K 0.5% 1/10W
R891	1-216-681-11	s	METAL, CHIP 18K 0.5% 1/10W
R923	1-216-748-11	s	METAL, CHIP 39K 1% 1/10W
R927	1-216-110-00	s	METAL, CHIP 360K 5% 1/10W
R953	1-214-972-00	s	METAL 0.22 1% 1/4W
RV801	1-230-520-11	s	RES, ADJ, METAL 1K
RV802	1-230-523-11	s	RES, ADJ, METAL 10K
RV803	1-230-527-11	s	RES, ADJ, METAL 100K
RV901	1-230-529-11	s	RES, ADJ, METAL 470K
THP801	1-202-854-00	s	THERMISTOR, POSITIVE

MS-4 BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	A-7090-029-A	s	MOUNTED CIRCUIT BOARD, MS-4

MT-57 BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	A-7061-773-A	o	MOUNTED CIRCUIT BOARD, MT-57
2pcs	1-520-506-11	s	METER, AUDIO LEVEL
2pcs	3-738-923-01	o	HOLDER, LED
D1	8-719-820-27	s	LED TLY-256, YEL
D2	8-719-820-27	s	LED TLY-256, YEL
D3	8-719-820-27	s	LED TLY-256, YEL
D4	8-719-820-27	s	LED TLY-256, YEL
R1	1-249-411-11	s	CARBON 330 5% 1/4W
R2	1-249-411-11	s	CARBON 330 5% 1/4W

NOTE: Please see pages 14-15 thru 14-18 for the parts that are not listed in the parts list.

PA-27 BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	A-7061-826-A	o	MOUNTED CIRCUIT BOARD, PA-27

All of the component parts on the PA-27 Board are supplied together with when you order MB-19 Board.

Ref. No. or Q'ty	Part No.	SP	Description
C001	1-163-012-00	s	CERAMIC CHIP 1800PF 10% 50V
C002	1-124-225-00	s	ELECT 100uF 20% 6.3V
C003	1-126-154-11	s	ELECT 47uF 20% 6.3V
C004	1-126-154-11	s	ELECT 47uF 20% 6.3V
C005	1-130-490-11	s	MYLAR 0.039uF 5% 50V
C007	1-130-479-00	s	MYLAR 0.0047uF 5% 50V
C008	1-126-154-11	s	ELECT 47uF 20% 6.3V
C010	1-126-154-11	s	ELECT 47uF 20% 6.3V
C011	1-130-469-00	s	FILM 680PF 5% 50V
C012	1-130-482-00	s	MYLAR 0.0082uF 5% 50V
C013	1-135-149-21	s	TANTALUM, CHIP 2.2uF 10% 10V
C014	1-135-156-21	s	TANTALUM, CHIP 6.8uF 10% 10V
C015	1-135-072-21	s	TANTALUM, CHIP 0.22uF 10% 35V
C016	1-126-153-11	s	ELECT 22uF 20% 6.3V
C018	1-126-153-11	s	ELECT 22uF 20% 6.3V
C019	1-126-153-11	s	ELECT 22uF 20% 6.3V
C031	1-124-225-00	s	ELECT 100uF 20% 6.3V
C032	1-124-225-00	s	ELECT 100uF 20% 6.3V
C034	1-126-154-11	s	ELECT 47uF 20% 6.3V
C035	1-126-154-11	s	ELECT 47uF 20% 6.3V
C037	1-126-154-11	s	ELECT 47uF 20% 6.3V
C038	1-135-156-21	s	TANTALUM, CHIP 6.8uF 10% 10V
C039	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C040	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C041	1-109-814-11	s	MICA, CHIP 220PF 5% 100V
C042	1-126-154-11	s	ELECT 47uF 20% 6.3V
C043	1-126-153-11	s	ELECT 22uF 20% 6.3V
C044	1-126-154-11	s	ELECT 47uF 20% 6.3V
C051	1-163-012-00	s	CERAMIC CHIP 1800PF 10% 50V
C052	1-124-225-00	s	ELECT 100uF 20% 6.3V
C053	1-126-154-11	s	ELECT 47uF 20% 6.3V
C054	1-126-154-11	s	ELECT 47uF 20% 6.3V
C055	1-130-490-11	s	MYLAR 0.039uF 5% 50V
C057	1-130-479-00	s	MYLAR 0.0047uF 5% 50V
C058	1-126-154-11	s	ELECT 47uF 20% 6.3V
C060	1-126-154-11	s	ELECT 47uF 20% 6.3V
C061	1-130-469-00	s	FILM 680PF 5% 50V
C062	1-130-482-00	s	MYLAR 0.0082uF 5% 50V
C063	1-135-149-21	s	TANTALUM, CHIP 2.2uF 10% 10V
C064	1-135-156-21	s	TANTALUM, CHIP 6.8uF 10% 10V
C065	1-135-072-21	s	TANTALUM, CHIP 0.22uF 10% 35V
C066	1-126-153-11	s	ELECT 22uF 20% 6.3V
C068	1-126-153-11	s	ELECT 22uF 20% 6.3V
C069	1-126-153-11	s	ELECT 22uF 20% 6.3V
CN001	1-563-314-11	s	CONNECTOR, BOARD TO BOARD 20P
D031	8-719-104-34	s	DIODE 1S2835
D032	8-719-104-34	s	DIODE 1S2835
D033	8-719-104-34	s	DIODE 1S2835
IC001	8-752-009-90	s	IC CX20099
IC002	8-759-981-92	s	IC RC4558M
IC003	8-759-981-92	s	IC RC4558M
IC004	8-752-322-57	s	IC CXD1077M
IC004	8-752-322-57	s	IC CXD1077M

(PA-27 BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
IC005	8-759-908-15	s	IC TL431CLP
L001	1-408-793-21	s	INDUCTOR, CHIP 220uH
Q001	8-729-202-38	s	TRANSISTOR 2SC3326N
Q002	8-729-202-38	s	TRANSISTOR 2SC3326N
Q031	8-729-207-70	s	TRANSISTOR RN2404
Q031	8-729-805-69	s	TRANSISTOR 2SA1341
Q031	8-729-901-06	s	TRANSISTOR DTA144EK
Q032	8-729-207-70	s	TRANSISTOR RN2404
Q032	8-729-805-69	s	TRANSISTOR 2SA1341
Q032	8-729-901-06	s	TRANSISTOR DTA144EK
Q033	8-729-207-70	s	TRANSISTOR RN2404
Q033	8-729-805-69	s	TRANSISTOR 2SA1341
Q033	8-729-901-06	s	TRANSISTOR DTA144EK
Q034	8-729-216-22	s	TRANSISTOR 2SA1162
Q035	8-729-216-22	s	TRANSISTOR 2SA1162
Q051	8-729-202-38	s	TRANSISTOR 2SC3326N
Q052	8-729-202-38	s	TRANSISTOR 2SC3326N
R002	1-216-078-00	s	METAL, CHIP 16K 5% 1/10W
R003	1-216-072-00	s	METAL, CHIP 9.1K 5% 1/10W
R012	1-216-677-11	s	METAL, CHIP 12K 0.5% 1/10W
R016	1-216-060-00	s	METAL, CHIP 3K 5% 1/10W
R017	1-216-058-00	s	METAL, CHIP 2.4K 5% 1/10W
R018	1-216-748-11	s	METAL, CHIP 39K 1% 1/10W
R032	1-216-700-11	s	METAL, CHIP 470K 1% 1/10W
R033	1-216-022-00	s	METAL, CHIP 75 5% 1/10W
R036	1-216-653-11	s	METAL, CHIP 1.2K 0.5% 1/10W
R037	1-216-661-11	s	METAL, CHIP 2.7K 0.5% 1/10W
R039	1-215-401-11	s	METAL 150 1% 1/6W
R052	1-216-078-00	s	METAL, CHIP 16K 5% 1/10W
R053	1-216-072-00	s	METAL, CHIP 9.1K 5% 1/10W
R062	1-216-677-11	s	METAL, CHIP 12K 0.5% 1/10W
R066	1-216-060-00	s	METAL, CHIP 3K 5% 1/10W
R067	1-216-058-00	s	METAL, CHIP 2.4K 5% 1/10W
R068	1-216-748-11	s	METAL, CHIP 39K 1% 1/10W
RV001	1-230-524-11	s	RES, ADJ, METAL 22K
RV002	1-230-521-11	s	RES, ADJ, METAL 2.2K
RV031	1-230-521-11	s	RES, ADJ, METAL 2.2K
RV032	1-230-529-11	s	RES, ADJ, METAL 470K
RV051	1-230-524-11	s	RES, ADJ, METAL 22K
RV052	1-230-521-11	s	RES, ADJ, METAL 2.2K

NOTE: Please see pages 14-15 thru 14-18 for the parts that are not listed in the parts list.

PD-19 BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	A-7061-825-A	o	MOUNTED CIRCUIT BOARD, PD-19

All of the component parts on the PD-19 Board are supplied toghther with when you order MB-19 Board.

Ref. No. or Q'ty	Part No.	SP	Description
C853	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C856	1-135-156-21	s	TANTALUM, CHIP 6.8uF 10% 10V
C858	1-135-145-11	s	TANTALUM, CHIP 0.47uF 10% 35V
C859	1-135-180-21	s	TANTALUM, CHIP 3.3uF 20% 10V
C860	1-135-156-21	s	TANTALUM, CHIP 6.8uF 10% 10V
C870	1-163-115-00	s	CERAMIC, CHIP 82PF 5% 50V
C872	1-135-156-21	s	TANTALUM, CHIP 6.8uF 10% 10V
C873	1-135-157-21	s	TANTALUM, CHIP 10uF 20% 6.3V
C875	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C876	1-163-005-11	s	CERAMIC, CHIP 470PF 10% 50V
C878	1-135-156-21	s	TANTALUM, CHIP 6.8uF 10% 10V
C880	1-135-156-21	s	TANTALUM, CHIP 6.8uF 10% 10V
C889	1-135-156-21	s	TANTALUM, CHIP 6.8uF 10% 10V
CN851	1-565-107-21	o	CONNECTOR, ON BOARD (2MM) 35P
CN852	1-565-107-21	o	CONNECTOR, ON BOARD (2MM) 35P
CN853	1-506-777-11	s	CONNECTOR, BOARD TO BOARD 20P
D851	8-719-104-34	s	DIODE 1S2835
D852	8-719-400-18	s	DIODE 1S2837-T1
D853	8-719-400-18	s	DIODE 1S2837-T1
IC851	8-752-324-45	s	IC CXD1066Q-Z
IC852	8-759-929-17	s	IC CXD1051M
IC853	8-752-010-30	s	IC CX20103
IC854	8-752-010-20	s	IC CX20102
IC855	8-752-331-00	s	IC CXK5864BM-12L
IC856	8-759-948-61	s	IC CX23011-Z
IC857	8-759-911-19	s	IC CX23012
IC858	8-759-972-12	s	IC CF77305FT
IC859	8-759-809-68	s	IC CXP5024H-079Q
IC860	8-759-972-13	s	IC CF77309FR
L851	1-410-393-11	s	INDUCTOR, CHIP 100uH
L852	1-410-393-11	s	INDUCTOR, CHIP 100uH
L853	1-410-393-11	s	INDUCTOR, CHIP 100uH
L855	1-410-393-11	s	INDUCTOR, CHIP 100uH
L856	1-410-393-11	s	INDUCTOR, CHIP 100uH
L857	1-410-393-11	s	INDUCTOR, CHIP 100uH
L858	1-410-393-11	s	INDUCTOR, CHIP 100uH
L859	1-410-393-11	s	INDUCTOR, CHIP 100uH
L860	1-410-393-11	s	INDUCTOR, CHIP 100uH
L861	1-410-393-11	s	INDUCTOR, CHIP 100uH
L862	1-410-393-11	s	INDUCTOR, CHIP 100uH
Q851	8-729-102-06	s	TRANSISTOR 2SC2223
Q851	8-729-102-07	s	TRANSISTOR 2SC2223-F13
Q851	8-729-102-07	s	TRANSISTOR 2SC2223-F13
Q852	8-729-122-63	s	TRANSISTOR 2SA1226
Q852	8-729-122-63	s	TRANSISTOR 2SA1226
Q853	8-729-102-06	s	TRANSISTOR 2SC2223
Q853	8-729-102-07	s	TRANSISTOR 2SC2223-F13
Q853	8-729-102-07	s	TRANSISTOR 2SC2223-F13
RV851	1-230-869-11	s	RES, ADJ, METAL 4.7K
RV854	1-230-868-11	s	RES, ADJ, METAL 2.2K
X851	1-567-669-91	s	RESONATOR, LITHIUM
X852	1-567-346-11	s	RESONATOR, CERAMIC 0.5MHz

NOTE: Please see pages 14-15 thru 14-18 for the parts that are not listed in the parts list.

PTC-32 BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	1-564-026-00	o	CONTACT, FEMALE, AWG26-30
1pc	1-622-638-11	o	PRINTED CIRCUIT BOARD, PTC-32
C1	1-124-234-00	s	ELECT 22uF 20% 16V
IC1	8-719-939-50	s	PHOTOINTERRUPTER GP-1L52
IC2	8-719-939-50	s	PHOTOINTERRUPTER GP-1L52
IC3	8-719-940-86	s	PHOTOINTERRUPTER GP-1L53
IC4	8-719-939-50	s	PHOTOINTERRUPTER GP-1L52
IC5	8-759-133-90	s	IC UPC339C

RM-83 BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	1-635-086-11	o	PRINTED CIRCUIT BOARD, RM-83
CN1001	1-563-890-21	s	CONNECTOR, D-SUB 9P, FEMALE

RP-73 BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	A-7061-827-A	o	MOUNTED CIRCUIT BOARD, RP-73

All of the component parts on the RP-73 Board are sypplied together with when you order FR-43 Board.

Ref. No. or Q'ty	Part No.	SP	Description
C001	1-162-974-11	s	CERAMIC, CHIP 0.01uF 50V
C002	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C003	1-163-809-11	s	CERAMIC, CHIP 0.047uF 10% 25V
C005	1-164-330-21	s	CERAMIC, CHIP 0.22uF 5% 16V
C006	1-135-161-21	s	TANTALUM, CHIP 22uF 10% 10V
C007	1-163-077-00	s	CERAMIC, CHIP 0.1uF 25V
C008	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C009	1-135-161-21	s	TANTALUM, CHIP 22uF 10% 10V
C010	1-163-077-00	s	CERAMIC, CHIP 0.1uF 25V
C011	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C012	1-164-330-21	s	CERAMIC, CHIP 0.22uF 5% 16V
C013	1-163-809-11	s	CERAMIC, CHIP 0.047uF 10% 25V
C015	1-162-974-11	s	CERAMIC, CHIP 0.01uF 50V
C016	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C017	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C020	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C021	1-162-974-11	s	CERAMIC, CHIP 0.01uF 50V
C022	1-135-091-00	s	TANTALUN, CHIP 1uF 10% 16V
C023	1-135-157-21	s	TANTALUM, CHIP 10uF 20% 6.3V
C024	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C025	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C027	1-135-091-00	s	TANTALUN, CHIP 1uF 10% 16V
C028	1-163-809-11	s	CERAMIC, CHIP 0.047uF 10% 25V
C029	1-163-809-11	s	CERAMIC, CHIP 0.047uF 10% 25V
C030	1-162-974-11	s	CERAMIC, CHIP 0.01uF 50V
C031	1-164-218-11	s	CERAMIC, CHIP 180PF 50V
C032	1-162-918-11	s	CERAMIC, CHIP 18PF 5% 50V
C033	1-163-809-11	s	CERAMIC, CHIP 0.047uF 10% 25V
C034	1-162-912-11	s	CERAMIC, CHIP 7PF 50V
C035	1-162-974-11	s	CERAMIC, CHIP 0.01uF 50V
C036	1-164-218-11	s	CERAMIC, CHIP 180PF 50V
C037	1-162-918-11	s	CERAMIC, CHIP 18PF 5% 50V
C038	1-163-809-11	s	CERAMIC, CHIP 0.047uF 10% 25V
C039	1-162-912-11	s	CERAMIC, CHIP 7PF 50V
C040	1-162-913-11	s	CERAMIC, CHIP 8PF 50V
C041	1-162-913-11	s	CERAMIC, CHIP 8PF 50V
C042	1-135-157-21	s	TANTALUM, CHIP 10uF 20% 6.3V
C043	1-135-157-21	s	TANTALUM, CHIP 10uF 20% 6.3V
C044	1-162-974-11	s	CERAMIC, CHIP 0.01uF 50V
D001	8-719-801-41	s	DIODE 1SS196
D002	8-719-801-41	s	DIODE 1SS196
IC001	8-752-033-00	s	IC CXA1234AR
L001	1-410-385-11	s	INDUCTOR, CHIP 22uH
L002	1-410-656-11	s	INDUCTOR, CHIP 150uH
L004	1-410-393-11	s	INDUCTOR, CHIP 100uH
L005	1-410-381-11	s	INDUCTOR, CHIP 10uH
L007	1-410-393-11	s	INDUCTOR, CHIP 100uH
L008	1-410-384-31	s	INDUCTOR, CHIP 18uH
L009	1-410-384-31	s	INDUCTOR, CHIP 18uH
Q002	8-729-102-07	s	TRANSISTOR 2SC2223-F13
Q003	8-729-102-07	s	TRANSISTOR 2SC2223-F13
R005	1-216-824-11	s	METAL, CHIP 1.8K 5% 1/16W

(RP-73 BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
R007	1-216-834-11	s	METAL, CHIP 12K 5% 1/16W
R008	1-216-835-11	s	METAL, CHIP 15K 5% 1/16W
R014	1-216-824-11	s	METAL, CHIP 1.8K 5% 1/16W
R026	1-216-837-11	s	METAL, CHIP 22K 5% 1/16W
R027	1-216-833-11	s	METAL, CHIP 10K 5% 1/16W
R028	1-216-797-11	s	METAL, CHIP 10 5% 1/16W
R029	1-216-812-11	s	METAL, CHIP 180 5% 1/16W
R030	1-216-837-11	s	METAL, CHIP 22K 5% 1/16W
R031	1-216-833-11	s	METAL, CHIP 10K 5% 1/16W
R032	1-216-797-11	s	METAL, CHIP 10 5% 1/16W
R033	1-216-812-11	s	METAL, CHIP 180 5% 1/16W
RV001	1-230-871-11	s	RES, ADJ, METAL 22K
RV002	1-230-871-11	s	RES, ADJ, METAL 22K
RV003	1-230-869-11	s	RES, ADJ, METAL 4.7K
RV004	1-230-869-11	s	RES, ADJ, METAL 4.7K

NOTE: Please see pages 14-15 thru 14-18 for the parts that are not listed in the parts list.

RP-103 BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	A-7062-166-A	o	MOUNTED CIRCUIT BOARD, RP-103

All of the component parts on the RP-103 Board are supplied together with when you order FR-43 Board.

Ref. No. or Q'ty	Part No.	SP	Description
C001	1-162-974-11	s	CERAMIC, CHIP 0.01uF 50V
C002	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C003	1-163-809-11	s	CERAMIC, CHIP 0.047uF 10% 25V
C005	1-164-330-21	s	CERAMIC, CHIP 0.22uF 5% 16V
C006	1-135-161-21	s	TANTALUM, CHIP 22uF 10% 10V
C007	1-163-077-00	s	CERAMIC, CHIP 0.1uF 25V
C008	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C009	1-135-161-21	s	TANTALUM, CHIP 22uF 10% 10V
C010	1-163-077-00	s	CERAMIC, CHIP 0.1uF 25V
C011	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C012	1-164-330-21	s	CERAMIC, CHIP 0.22uF 5% 16V
C013	1-163-809-11	s	CERAMIC, CHIP 0.047uF 10% 25V
C015	1-162-974-11	s	CERAMIC, CHIP 0.01uF 50V
C016	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C017	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C020	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C021	1-162-974-11	s	CERAMIC, CHIP 0.01uF 50V
C022	1-135-091-00	s	TANTALUN, CHIP 1uF 10% 16V
C023	1-135-157-21	s	TANTALUM, CHIP 10uF 20% 6.3V
C024	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C025	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C027	1-135-091-00	s	TANTALUN, CHIP 1uF 10% 16V
C029	1-163-809-11	s	CERAMIC, CHIP 0.047uF 10% 25V
C030	1-162-974-11	s	CERAMIC, CHIP 0.01uF 50V
C031	1-164-218-11	s	CERAMIC, CHIP 180PF 50V
C032	1-162-918-11	s	CERAMIC, CHIP 18PF 5% 50V
C033	1-163-809-11	s	CERAMIC, CHIP 0.047uF 10% 25V
C034	1-162-912-11	s	CERAMIC, CHIP 7PF 50V
C035	1-162-974-11	s	CERAMIC, CHIP 0.01uF 50V
C036	1-164-218-11	s	CERAMIC, CHIP 180PF 50V
C037	1-162-918-11	s	CERAMIC, CHIP 18PF 5% 50V
C038	1-163-809-11	s	CERAMIC, CHIP 0.047uF 10% 25V
C039	1-162-912-11	s	CERAMIC, CHIP 7PF 50V
C040	1-162-913-11	s	CERAMIC, CHIP 8PF 50V
C041	1-162-913-11	s	CERAMIC, CHIP 8PF 50V
C042	1-135-157-21	s	TANTALUM, CHIP 10uF 20% 6.3V
C043	1-135-157-21	s	TANTALUM, CHIP 10uF 20% 6.3V
C044	1-162-974-11	s	CERAMIC, CHIP 0.01uF 50V
D001	8-719-801-41	s	DIODE 1SS196
D002	8-719-801-41	s	DIODE 1SS196
IC001	8-752-033-00	s	IC CXA1234AR
L001	1-410-385-11	s	INDUCTOR, CHIP 22uH
L002	1-410-656-11	s	INDUCTOR, CHIP 150uH
L004	1-410-393-11	s	INDUCTOR, CHIP 100uH
L005	1-410-381-11	s	INDUCTOR, CHIP 10uH
L007	1-410-393-11	s	INDUCTOR, CHIP 100uH
L008	1-410-384-31	s	INDUCTOR, CHIP 18uH
L009	1-410-384-31	s	INDUCTOR, CHIP 18uH
Q002	8-729-102-07	s	TRANSISTOR 2SC2223-F13
Q003	8-729-102-07	s	TRANSISTOR 2SC2223-F13
R005	1-216-824-11	s	METAL, CHIP 1.8K 5% 1/16W
R007	1-216-836-11	s	METAL, CHIP 18K 5% 1/16W

NOTE: Please see pages 14-15 thru 14-18 for the parts that are not listed in the parts list.

(RP-103 BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
R008	1-216-837-11	s	METAL, CHIP 22K 5% 1/16W
R014	1-216-824-11	s	METAL, CHIP 1.8K 5% 1/16W
R026	1-216-837-11	s	METAL, CHIP 22K 5% 1/16W
R027	1-216-833-11	s	METAL, CHIP 10K 5% 1/16W
R028	1-216-797-11	s	METAL, CHIP 10 5% 1/16W
R029	1-216-812-11	s	METAL, CHIP 180 5% 1/16W
R030	1-216-837-11	s	METAL, CHIP 22K 5% 1/16W
R031	1-216-833-11	s	METAL, CHIP 10K 5% 1/16W
R032	1-216-797-11	s	METAL, CHIP 10 5% 1/16W
R033	1-216-812-11	s	METAL, CHIP 180 5% 1/16W
RV002	1-230-871-11	s	RES, ADJ, METAL 22K
RV003	1-230-869-11	s	RES, ADJ, METAL 4.7K
RV004	1-230-869-11	s	RES, ADJ, METAL 4.7K

RS-31 BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	A-7061-818-A	o	MOUNTED CIRCUIT BOARD, RS-31
1pc	1-559-762-11	o	CABLE, FLAT 22P
1pc	3-712-410-01	s	HOLDER, RS
CN304	1-563-494-11	o	CONNECTOR, FPC 6P
CN305	1-565-211-11	o	CONNECTOR, FPC 22P
D320	8-719-800-76	s	DIODE 1SS226
D321	8-719-800-76	s	DIODE 1SS226
IC301	8-759-908-81	s	IC MB3763PF
IC302	8-759-908-81	s	IC MB3763PF
PH301	8-719-939-11	s	PHOTOINTERRUPTER GP-2S09-B
PH302	8-719-939-11	s	PHOTOINTERRUPTER GP-2S09-B
PH303	8-719-939-11	s	PHOTOINTERRUPTER GP-2S09-B
PS301	⚠1-532-727-11	s	LINK, IC 0.25A
Q301	8-729-805-25	s	TRANSISTOR 2SB1121-S
Q302	8-729-216-22	s	TRANSISTOR 2SA1162
Q303	8-729-216-22	s	TRANSISTOR 2SA1162
Q304	8-729-216-22	s	TRANSISTOR 2SA1162
Q305	8-729-901-01	s	TRANSISTOR DTC144EK
Q306	8-729-901-01	s	TRANSISTOR DTC144EK
Q307	8-729-901-01	s	TRANSISTOR DTC144EK
R302	1-216-174-00	s	METAL, CHIP 100 5% 1/8W
R303	1-216-186-00	s	METAL, CHIP 330 5% 1/8W

SE-10(P) BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	A-7062-167-A	o	MOUNTED CIRCUIT BOARD, SE-10 (P)
This board includes IG-4 Board.			
C006	1-126-157-11	s	ELECT 10uF 20% 16V
C008	1-163-095-00	s	CERAMIC, CHIP 12PF 5% 50V
C009	1-163-095-00	s	CERAMIC, CHIP 12PF 5% 50V
C012	1-126-094-11	s	ELECT 4.7uF 20% 35V
C013	1-126-157-11	s	ELECT 10uF 20% 16V
C016	1-163-077-00	s	CERAMIC, CHIP 0.1uF 25V
C020	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C022	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C028	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C034	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C101	1-126-157-11	s	ELECT 10uF 20% 16V
C102	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C103	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C104	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C110	1-126-320-11	s	ELECT, NONPOLAR 10uF 20% 16V
C111	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C112	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C113	1-163-809-11	s	CERAMIC, CHIP 0.047uF 10% 25V
C115	1-126-157-11	s	ELECT 10uF 20% 16V
C116	1-124-499-11	s	ELECT, NONPOLAR 1uF 20% 50V
C118	1-126-157-11	s	ELECT 10uF 20% 16V
C120	1-163-209-00	s	CERAMIC, CHIP 0.0015uF 5% 50V
C121	1-163-209-00	s	CERAMIC, CHIP 0.0015uF 5% 50V
C122	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C127	1-163-809-11	s	CERAMIC, CHIP 0.047uF 10% 25V
C128	1-124-767-00	s	ELECT, NONPOLAR 2.2uF 20% 50V
C130	1-163-809-11	s	CERAMIC, CHIP 0.047uF 10% 25V
C131	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C133	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C134	1-124-499-11	s	ELECT, NONPOLAR 1uF 20% 50V
C136	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C137	1-124-768-11	s	ELECT, NONPOLAR 4.7uF 20% 50V
C146	1-101-880-00	s	CERAMIC 47PF 5% 50V
C202	1-163-123-00	s	CERAMIC, CHIP 180PF 5% 50V
C205	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C206	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C208	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C209	1-163-809-11	s	CERAMIC, CHIP 0.047uF 10% 25V
C210	1-124-234-00	s	ELECT 22uF 20% 16V
C211	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C212	1-163-809-11	s	CERAMIC, CHIP 0.047uF 10% 25V
C213	1-163-809-11	s	CERAMIC, CHIP 0.047uF 10% 25V
C214	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C215	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C217	1-163-809-11	s	CERAMIC, CHIP 0.047uF 10% 25V
C218	1-163-989-11	s	CERAMIC, CHIP 0.033uF 10% 25V
C219	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C220	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C221	1-124-256-00	s	ELECT 1.5uF 20% 50V
C224	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C301	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C302	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C303	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C304	1-124-584-00	s	ELECT 100uF 20% 10V
C305	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C306	1-124-584-00	s	ELECT 100uF 20% 10V

(SE-10(P) BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
C307	1-126-094-11	s	ELECT 4.7uF 20% 35V
C308	1-124-257-00	s	ELECT 2.2uF 20% 50V
C309	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C310	1-163-077-00	s	CERAMIC, CHIP 0.1uF 25V
C401	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C402	1-163-103-00	s	CERAMIC, CHIP 27PF 5% 50V
C403	1-126-094-11	s	ELECT 4.7uF 20% 35V
C404	1-126-094-11	s	ELECT 4.7uF 20% 35V
C405	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C408	1-163-809-11	s	CERAMIC, CHIP 0.047uF 10% 25V
C409	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C412	1-126-157-11	s	ELECT 10uF 20% 16V
C503	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C504	1-124-257-00	s	ELECT 2.2uF 20% 50V
C506	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C508	1-124-589-11	s	ELECT 47uF 20% 16V
C601	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C604	1-124-589-11	s	ELECT 47uF 20% 16V
C606	1-163-809-11	s	CERAMIC, CHIP 0.047uF 10% 25V
C607	1-163-809-11	s	CERAMIC, CHIP 0.047uF 10% 25V
C608	1-163-809-11	s	CERAMIC, CHIP 0.047uF 10% 25V
C610	1-163-009-11	s	CERAMIC, CHIP 0.001uF 10% 50V
C611	1-126-157-11	s	ELECT 10uF 20% 16V
C612	1-126-157-11	s	ELECT 10uF 20% 16V
C613	1-163-009-11	s	CERAMIC, CHIP 0.001uF 10% 50V
C614	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C615	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C616	1-164-633-11	s	CERAMIC, CHIP 0.1uF 10% 25V
C617	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C620	1-163-009-11	s	CERAMIC, CHIP 0.001uF 10% 50V
C621	1-163-009-11	s	CERAMIC, CHIP 0.001uF 10% 50V
C622	1-163-009-11	s	CERAMIC, CHIP 0.001uF 10% 50V
C623	1-163-009-11	s	CERAMIC, CHIP 0.001uF 10% 50V
C624	1-163-009-11	s	CERAMIC, CHIP 0.001uF 10% 50V
C625	1-163-009-11	s	CERAMIC, CHIP 0.001uF 10% 50V
C626	1-163-009-11	s	CERAMIC, CHIP 0.001uF 10% 50V
C627	1-163-009-11	s	CERAMIC, CHIP 0.001uF 10% 50V
C628	1-163-009-11	s	CERAMIC, CHIP 0.001uF 10% 50V
C629	1-163-009-11	s	CERAMIC, CHIP 0.001uF 10% 50V
C630	1-163-009-11	s	CERAMIC, CHIP 0.001uF 10% 50V
C631	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C632	1-126-157-11	s	ELECT 10uF 20% 16V
C633	1-102-963-00	s	CERAMIC 33PF 5% 50V
CN001	1-566-641-11	o	CONNECTOR, EL-BOW, 18P, MALE
CN002	1-566-941-11	o	CONNECTOR, EL-BOW, 30P, MALE
CN003	1-566-641-11	o	CONNECTOR, EL-BOW, 18P, MALE
CN004	1-566-943-11	s	CONNECTOR, BOARD TO BOARD 18P
CN005	1-566-944-11	s	CONNECTOR, BOARD TO BOARD 22P
CN011	1-565-212-11	s	CONNECTOR, FPC 26P
CN012	1-565-211-11	o	CONNECTOR, FPC 22P
D003	8-719-400-18	s	DIODE 1S2837-T1
D004	8-719-400-18	s	DIODE 1S2837-T1
D005	8-719-400-18	s	DIODE 1S2837-T1
D006	8-719-104-34	s	DIODE 1S2835
D007	8-719-400-18	s	DIODE 1S2837-T1
D008	8-719-400-18	s	DIODE 1S2837-T1
D009	8-719-400-18	s	DIODE 1S2837-T1
D012	8-719-400-18	s	DIODE 1S2837-T1

NOTE: Please see pages 14-15 thru 14-18 for the parts that are not listed in the parts list.

(SE-10(P) BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
D013	8-719-400-18	s	DIODE 1S2837-T1
D015	8-719-104-34	s	DIODE 1S2835
D016	8-719-104-34	s	DIODE 1S2835
D102	8-719-800-76	s	DIODE 1SS226
D103	8-719-800-76	s	DIODE 1SS226
D104	8-719-104-34	s	DIODE 1S2835
D105	8-719-400-18	s	DIODE 1S2837-T1
D106	8-719-400-18	s	DIODE 1S2837-T1
D107	8-719-104-34	s	DIODE 1S2835
D108	8-719-400-18	s	DIODE 1S2837-T1
D109	8-719-400-18	s	DIODE 1S2837-T1
D110	8-719-104-34	s	DIODE 1S2835
D111	8-719-400-18	s	DIODE 1S2837-T1
D112	8-719-104-34	s	DIODE 1S2835
D201	8-719-400-18	s	DIODE 1S2837-T1
D202	8-719-400-18	s	DIODE 1S2837-T1
D203	8-719-105-82	s	DIODE RD5.1M-B2
D203	8-719-105-83	s	DIODE RD5.1M-B3
D301	8-719-400-18	s	DIODE 1S2837-T1
D302	8-719-400-18	s	DIODE 1S2837-T1
D401	8-719-800-76	s	DIODE 1SS226
D701	8-719-400-18	s	DIODE 1S2837-T1
FL201	1-235-611-21	s	FILTER, BANDPASS
FL202	1-235-612-21	s	FILTER, BANDPASS
IC001	8-752-816-72	s	IC CXP80116-692Q
IC002	8-752-816-09	s	IC CXP5048H-228Q
IC003	8-752-815-13	s	IC CXP5048H-222Q
IC004	8-759-144-21	s	IC UPD75106G-573-1B
IC007	8-759-208-15	s	IC TC4066BFHB
IC008	8-759-937-56	s	IC S-8054ALB-LM-S
IC101	8-752-003-50	s	IC CX20035
IC102	8-759-803-47	s	IC LA5005M
IC103	8-759-925-66	s	IC BA6303F
IC104	8-759-981-75	s	IC RC3403AM
IC105	8-759-208-11	s	IC TC4053BFHB
IC106	8-759-971-25	s	IC MB674169U
IC107	8-759-100-94	s	IC UPC358G2
IC108	8-759-208-15	s	IC TC4066BFHB
IC201	8-759-928-56	s	IC CXA1042M
IC202	8-759-100-95	s	IC UPC324G2
IC203	8-759-208-11	s	IC TC4053BFHB
IC204	8-759-927-46	s	IC SN74HC00NS
IC301	8-759-100-94	s	IC UPC358G2
IC302	8-759-208-11	s	IC TC4053BFHB
IC303	8-759-208-11	s	IC TC4053BFHB
IC304	8-759-200-90	s	IC TC4538BF
IC305	8-759-927-46	s	IC SN74HC00NS
IC601	8-759-996-78	s	IC BU3707F
IC602	8-759-927-52	s	IC BA7036LS
IC603	8-759-100-93	s	IC UPC393G2
IC604	8-759-100-95	s	IC UPC324G2
L001	1-408-777-00	s	INDUCTOR, CHIP 10uH
L002	1-408-777-00	s	INDUCTOR, CHIP 10uH
L003	1-408-777-00	s	INDUCTOR, CHIP 10uH
L101	1-408-777-00	s	INDUCTOR, CHIP 10uH
L401	1-408-777-00	s	INDUCTOR, CHIP 10uH
L402	1-408-777-00	s	INDUCTOR, CHIP 10uH

NOTE: Please see pages 14-15 thru 14-18 for the parts that
are not listed in the parts list.

(SE-10(P) BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
L403	1-408-783-00	s	INDUCTOR, CHIP 33uH
L404	1-408-777-00	s	INDUCTOR, CHIP 10uH
L501	1-408-777-00	s	INDUCTOR, CHIP 10uH
L601	1-408-777-00	s	INDUCTOR, CHIP 10uH
L602	1-408-777-00	s	INDUCTOR, CHIP 10uH
PS601	⚠1-532-679-00	s	LINK, IC 0.6A
Q002	8-729-901-01	s	TRANSISTOR DTC144EK
Q003	8-729-901-06	s	TRANSISTOR DTA144EK
Q004	8-729-901-01	s	TRANSISTOR DTC144EK
Q005	8-729-901-01	s	TRANSISTOR DTC144EK
Q006	8-729-901-01	s	TRANSISTOR DTC144EK
Q007	8-729-901-01	s	TRANSISTOR DTC144EK
Q008	8-729-901-01	s	TRANSISTOR DTC144EK
Q009	8-729-901-01	s	TRANSISTOR DTC144EK
Q010	8-729-901-06	s	TRANSISTOR DTA144EK
Q011	8-729-901-06	s	TRANSISTOR DTA144EK
Q014	8-729-901-01	s	TRANSISTOR DTC144EK
Q015	8-729-901-01	s	TRANSISTOR DTC144EK
Q018	8-729-901-01	s	TRANSISTOR DTC144EK
Q101	8-729-901-06	s	TRANSISTOR DTA144EK
Q102	8-729-901-06	s	TRANSISTOR DTA144EK
Q103	8-729-901-06	s	TRANSISTOR DTA144EK
Q104	8-729-901-01	s	TRANSISTOR DTC144EK
Q106	8-729-100-66	s	TRANSISTOR 2SC1623
Q107	8-729-901-06	s	TRANSISTOR DTA144EK
Q108	8-729-901-06	s	TRANSISTOR DTA144EK
Q109	8-729-901-06	s	TRANSISTOR DTA144EK
Q110	8-729-901-06	s	TRANSISTOR DTA144EK
Q111	8-729-100-66	s	TRANSISTOR 2SC1623
Q112	8-729-901-01	s	TRANSISTOR DTC144EK
Q113	8-729-901-01	s	TRANSISTOR DTC144EK
Q114	8-729-901-01	s	TRANSISTOR DTC144EK
Q115	8-729-901-01	s	TRANSISTOR DTC144EK
Q116	8-729-901-06	s	TRANSISTOR DTA144EK
Q201	8-729-100-66	s	TRANSISTOR 2SC1623
Q202	8-729-216-22	s	TRANSISTOR 2SA1162
Q205	8-729-901-01	s	TRANSISTOR DTC144EK
Q206	8-729-901-06	s	TRANSISTOR DTA144EK
Q207	8-729-901-06	s	TRANSISTOR DTA144EK
Q208	8-729-100-66	s	TRANSISTOR 2SC1623
Q209	8-729-901-06	s	TRANSISTOR DTA144EK
Q210	8-729-901-01	s	TRANSISTOR DTC144EK
Q301	8-729-901-06	s	TRANSISTOR DTA144EK
Q302	8-729-901-01	s	TRANSISTOR DTC144EK
Q303	8-729-901-01	s	TRANSISTOR DTC144EK
Q304	8-729-901-01	s	TRANSISTOR DTC144EK
Q305	8-729-901-01	s	TRANSISTOR DTC144EK
Q306	8-729-901-06	s	TRANSISTOR DTA144EK
Q307	8-729-901-01	s	TRANSISTOR DTC144EK
Q308	8-729-901-01	s	TRANSISTOR DTC144EK
Q309	8-729-901-01	s	TRANSISTOR DTC144EK
Q401	8-729-216-22	s	TRANSISTOR 2SA1162
Q402	8-729-100-66	s	TRANSISTOR 2SC1623
Q403	8-729-100-66	s	TRANSISTOR 2SC1623
Q404	8-729-216-22	s	TRANSISTOR 2SA1162
Q405	8-729-100-66	s	TRANSISTOR 2SC1623
Q406	8-729-216-22	s	TRANSISTOR 2SA1162
Q407	8-729-100-66	s	TRANSISTOR 2SC1623

(SE-10(P) BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
Q408	8-729-216-22	s	TRANSISTOR 2SA1162
Q409	8-729-100-66	s	TRANSISTOR 2SC1623
Q410	8-729-100-66	s	TRANSISTOR 2SC1623
Q411	8-729-100-66	s	TRANSISTOR 2SC1623
Q502	8-729-100-66	s	TRANSISTOR 2SC1623
Q503	8-729-901-06	s	TRANSISTOR DTA144EK
Q504	8-729-100-66	s	TRANSISTOR 2SC1623
Q505	8-729-100-66	s	TRANSISTOR 2SC1623
Q506	8-729-100-66	s	TRANSISTOR 2SC1623
Q507	8-729-901-06	s	TRANSISTOR DTA144EK
Q508	8-729-901-06	s	TRANSISTOR DTA144EK
Q601	8-729-901-06	s	TRANSISTOR DTA144EK
Q604	8-729-805-25	s	TRANSISTOR 2SB1121-S
Q605	8-729-100-66	s	TRANSISTOR 2SC1623
Q606	8-729-900-65	s	TRANSISTOR DTA144ES
Q701	8-729-901-06	s	TRANSISTOR DTA144EK
Q702	8-729-901-06	s	TRANSISTOR DTA144EK
Q703	8-729-901-01	s	TRANSISTOR DTC144EK
Q704	8-729-216-22	s	TRANSISTOR 2SA1162
Q705	8-729-216-22	s	TRANSISTOR 2SA1162
Q706	8-729-100-66	s	TRANSISTOR 2SC1623
Q707	8-729-100-66	s	TRANSISTOR 2SC1623
Q708	8-729-901-06	s	TRANSISTOR DTA144EK
Q709	8-729-901-06	s	TRANSISTOR DTA144EK
Q710	8-729-901-06	s	TRANSISTOR DTA144EK
Q711	8-729-901-06	s	TRANSISTOR DTA144EK
Q712	8-729-901-06	s	TRANSISTOR DTA144EK
Q713	8-729-901-01	s	TRANSISTOR DTC144EK
Q714	8-729-901-01	s	TRANSISTOR DTC144EK
R020	1-216-687-11	s	METAL, CHIP 33K 0.5% 1/10W
R021	1-216-687-11	s	METAL, CHIP 33K 0.5% 1/10W
R022	1-216-687-11	s	METAL, CHIP 33K 0.5% 1/10W
R023	1-216-674-11	s	METAL, CHIP 9.1K 0.5% 1/10W
R076	1-216-080-00	s	METAL, CHIP 20K 5% 1/10W
R077	1-216-080-00	s	METAL, CHIP 20K 5% 1/10W
R078	1-216-080-00	s	METAL, CHIP 20K 5% 1/10W
R079	1-216-080-00	s	METAL, CHIP 20K 5% 1/10W
R080	1-216-080-00	s	METAL, CHIP 20K 5% 1/10W
R081	1-216-080-00	s	METAL, CHIP 20K 5% 1/10W
R082	1-216-080-00	s	METAL, CHIP 20K 5% 1/10W
R083	1-216-080-00	s	METAL, CHIP 20K 5% 1/10W
R084	1-216-080-00	s	METAL, CHIP 20K 5% 1/10W
R133	1-216-748-11	s	METAL, CHIP 39K 1% 1/10W
R137	1-216-663-11	s	METAL, CHIP 3.3K 0.5% 1/10W
R138	1-216-667-11	s	METAL, CHIP 4.7K 0.5% 1/10W
R151	1-216-082-00	s	METAL, CHIP 24K 5% 1/10W
R234	1-247-895-00	s	CARBON 470K 5% 1/4W
R413	1-216-052-00	s	METAL, CHIP 1.3K 5% 1/10W
R508	1-216-072-00	s	METAL, CHIP 9.1K 5% 1/10W
R553	1-216-748-11	s	METAL, CHIP 39K 1% 1/10W
R554	1-216-076-00	s	METAL, CHIP 13K 5% 1/10W
R562	1-216-090-00	s	METAL, CHIP 51K 5% 1/10W
R703	1-216-691-11	s	METAL, CHIP 47K 0.5% 1/10W
R704	1-216-693-11	s	METAL, CHIP 56K 0.5% 1/10W
R705	1-216-663-11	s	METAL, CHIP 3.3K 0.5% 1/10W
R706	1-216-697-11	s	METAL, CHIP 82K 0.5% 1/10W
R708	1-216-685-11	s	METAL, CHIP 27K 0.5% 1/10W
R709	1-216-689-11	s	METAL, CHIP 39K 0.5% 1/10W
R710	1-216-681-11	s	METAL, CHIP 18K 0.5% 1/10W
R711	1-216-673-11	s	METAL, CHIP 8.2K 0.5% 1/10W
R712	1-216-685-11	s	METAL, CHIP 27K 0.5% 1/10W
R713	1-216-689-11	s	METAL, CHIP 39K 0.5% 1/10W
R714	1-216-663-11	s	METAL, CHIP 3.3K 0.5% 1/10W
RV101	1-230-875-21	s	RES, ADJ, METAL 220K
RV102	1-230-875-21	s	RES, ADJ, METAL 220K
RV103	1-230-871-11	s	RES, ADJ, METAL 22K
RV104	1-230-871-11	s	RES, ADJ, METAL 22K
RV105	1-230-870-11	s	RES, ADJ, METAL 10K
RV106	1-230-870-11	s	RES, ADJ, METAL 10K
RV201	1-230-873-11	s	RES, ADJ, METAL 47K
RV203	1-230-869-11	s	RES, ADJ, METAL 4.7K
RV204	1-230-869-11	s	RES, ADJ, METAL 4.7K
RV301	1-230-868-11	s	RES, ADJ, METAL 2.2K
RV302	1-230-868-11	s	RES, ADJ, METAL 2.2K
RV303	1-230-869-11	s	RES, ADJ, METAL 4.7K
RV304	1-230-873-11	s	RES, ADJ, METAL 47K
X001	1-577-116-21	s	CRYSTAL 16MHz
X002	1-567-346-11	s	RESONATOR, CERAMIC 0.5MHz
X003	1-567-346-11	s	RESONATOR, CERAMIC 0.5MHz
X004	1-567-160-21	s	RESONATOR, CERAMIC 4.19MHz
X101	1-567-504-31	s	CRYSTAL 4.433619MHz

SW-346 BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	1-631-793-11	o	PRINTED CIRCUIT BOARD, SW-346
CN224	1-506-471-11	s	CONNECTOR, 6P, MALE
R1	1-249-433-11	s	CARBON 22K 5% 1/4W
R2	1-249-433-11	s	CARBON 22K 5% 1/4W
RV1	1-238-483-11	s	RES, VAR CARBON 5K
RV2	1-238-483-11	s	RES, VAR CARBON 5K
S1002	1-516-963-00	s	SWITCH, LEVER SLIDE

NOTE: Please see pages 14-15 thru 14-18 for the parts that are not listed in the parts list.

SW-347A BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	1-631-794-11	o	PRINTED CIRCUIT BOARD, SW-347
C1	1-124-589-11	s	ELECT 47uF 20% 16V
R3	1-249-411-11	s	CARBON 330 5% 1/4W
RV2	1-230-122-00	s	RES, VAR CARBON 100K
S1	1-554-481-00	s	SWITCH, SLIDE
S2	1-554-481-00	s	SWITCH, SLIDE
S3	1-571-908-11	s	SWITCH, SLIDE
S4	1-571-908-11	s	SWITCH, SLIDE
S5	1-554-481-00	s	SWITCH, SLIDE

SW-348 BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	1-631-795-11	o	PRINTED CIRCUIT BOARD, SW-348
S1007	1-516-961-00	s	SWITCH, LEVER SLIDE

SY-145A BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	A-7062-151-A	o	MOUNTED CIRCUIT BOARD, SY-145A
1pc	3-646-090-00	s	RIVET, NYLON
1pc	3-657-153-00	o	HINGE
1pc	7-682-903-01	s	SCREW +PWH 3X5
C1	1-130-487-00	s	MYLAR 0.022uF 5% 50V
C2	1-162-207-31	s	CERAMIC 22PF 5% 50V
C3	1-130-487-00	s	MYLAR 0.022uF 5% 50V
C4	1-162-207-31	s	CERAMIC 22PF 5% 50V
C5	1-162-210-31	s	CERAMIC 30PF 5% 50V
C6	1-162-210-31	s	CERAMIC 30PF 5% 50V
C8	1-161-379-00	s	CERAMIC 0.01uF 20% 25V
C9	1-161-051-00	s	CERAMIC 0.01uF 10% 50V
C10	1-126-233-11	s	ELECT 22uF 20% 50V
C12	1-131-349-00	s	TANTALUM 2.2uF 10% 35V
C14	1-124-927-11	s	ELECT 4.7uF 20% 100V
C15	1-161-379-00	s	CERAMIC 0.01uF 20% 25V
C16	1-161-379-00	s	CERAMIC 0.01uF 20% 25V
C17	1-107-085-00	s	MICA 100PF 5% 50V
C18	1-107-085-00	s	MICA 100PF 5% 50V
C19	1-162-282-31	s	CERAMIC 100PF 10% 50V
C20	1-161-379-00	s	CERAMIC 0.01uF 20% 25V
C21	1-161-379-00	s	CERAMIC 0.01uF 20% 25V
C23	1-161-379-00	s	CERAMIC 0.01uF 20% 25V
C25	1-161-055-00	s	CERAMIC 0.022uF 10% 50V
C26	1-161-379-00	s	CERAMIC 0.01uF 20% 25V
C27	1-161-379-00	s	CERAMIC 0.01uF 20% 25V
C29	1-107-085-00	s	MICA 100PF 5% 50V
C30	1-107-085-00	s	MICA 100PF 5% 50V
C31	1-162-282-31	s	CERAMIC 100PF 10% 50V
C100	1-162-282-31	s	CERAMIC 100PF 10% 50V
C101	1-130-471-00	s	MYLAR 0.001uF 5% 50V
C102	1-130-473-00	s	MYLAR 0.0015uF 5% 50V
C103	1-161-379-00	s	CERAMIC 0.01uF 20% 25V
C104	1-107-159-00	s	MICA 33PF 5% 500V
C105	1-130-471-00	s	MYLAR 0.001uF 5% 50V
C106	1-130-477-00	s	MYLAR 0.0033uF 5% 50V
C108	1-130-475-00	s	MYLAR 0.0022uF 5% 50V
C109	1-162-294-31	s	CERAMIC 0.001uF 10% 50V
C110	1-162-288-31	s	CERAMIC 330PF 10% 50V
C112	1-161-379-00	s	CERAMIC 0.01uF 20% 25V
C115	1-161-379-00	s	CERAMIC 0.01uF 20% 25V
C116	1-161-379-00	s	CERAMIC 0.01uF 20% 25V
C117	1-161-379-00	s	CERAMIC 0.01uF 20% 25V
C118	1-161-379-00	s	CERAMIC 0.01uF 20% 25V
C204	1-124-234-00	s	ELECT 22uF 20% 16V
C206	1-130-471-00	s	MYLAR 0.001uF 5% 50V
C207	1-130-477-00	s	MYLAR 0.0033uF 5% 50V
C208	1-162-294-31	s	CERAMIC 0.001uF 10% 50V
C209	1-130-475-00	s	MYLAR 0.0022uF 5% 50V
C210	1-162-288-31	s	CERAMIC 330PF 10% 50V
C212	1-126-157-11	s	ELECT 10uF 20% 16V
C213	1-162-210-31	s	CERAMIC 30PF 5% 50V
C214	1-162-210-31	s	CERAMIC 30PF 5% 50V
C215	1-161-379-00	s	CERAMIC 0.01uF 20% 25V
C217	1-161-379-00	s	CERAMIC 0.01uF 20% 25V
C218	1-161-379-00	s	CERAMIC 0.01uF 20% 25V
C219	1-161-379-00	s	CERAMIC 0.01uF 20% 25V
C220	1-130-491-00	s	MYLAR 0.047uF 5% 50V
C221	1-161-379-00	s	CERAMIC 0.01uF 20% 25V

NOTE: Please see pages 14-15 thru 14-18 for the parts that are not listed in the parts list.

(SY-145A BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
C222	1-130-475-00	s	MYLAR 0.0022uF 5% 50V
C223	1-161-379-00	s	CERAMIC 0.01uF 20% 25V
C307	1-162-210-31	s	CERAMIC 30PF 5% 50V
C308	1-162-210-31	s	CERAMIC 30PF 5% 50V
C309	1-130-471-00	s	MYLAR 0.001uF 5% 50V
C310	1-130-471-00	s	MYLAR 0.001uF 5% 50V
C312	1-161-379-00	s	CERAMIC 0.01uF 20% 25V
C313	1-161-379-00	s	CERAMIC 0.01uF 20% 25V
C314	1-162-290-31	s	CERAMIC 470PF 10% 50V
C316	1-161-379-00	s	CERAMIC 0.01uF 20% 25V
C317	1-161-379-00	s	CERAMIC 0.01uF 20% 25V
C318	1-161-379-00	s	CERAMIC 0.01uF 20% 25V
C319	1-161-379-00	s	CERAMIC 0.01uF 20% 25V
C320	1-161-379-00	s	CERAMIC 0.01uF 20% 25V
C321	1-161-379-00	s	CERAMIC 0.01uF 20% 25V
C322	1-161-379-00	s	CERAMIC 0.01uF 20% 25V
C323	1-161-379-00	s	CERAMIC 0.01uF 20% 25V
C324	1-161-379-00	s	CERAMIC 0.01uF 20% 25V
C325	1-161-379-00	s	CERAMIC 0.01uF 20% 25V
C326	1-130-490-11	s	MYLAR 0.039uF 5% 50V
C327	1-162-282-31	s	CERAMIC 100PF 10% 50V
C328	1-102-112-00	s	CERAMIC 330PF 10% 50V
C329	1-130-491-00	s	MYLAR 0.047uF 5% 50V
C400	1-102-110-00	s	CERAMIC 220PF 10% 50V
CN509	1-506-471-11	s	CONNECTOR, 6P, MALE
CNI2	1-526-659-00	o	SOCKET, IC 28P
CV100	1-141-389-11	s	CAP, TRIMMER 50PF
D1	8-719-911-19	s	DIODE 1SS119
D2	8-719-911-19	s	DIODE 1SS119
D3	8-719-911-19	s	DIODE 1SS119
D5	8-719-911-19	s	DIODE 1SS119
D6	8-719-911-19	s	DIODE 1SS119
D201	8-719-911-19	s	DIODE 1SS119
D202	8-719-911-19	s	DIODE 1SS119
D203	8-719-911-19	s	DIODE 1SS119
D301	8-719-911-19	s	DIODE 1SS119
D302	8-719-911-19	s	DIODE 1SS119
D304	8-719-911-19	s	DIODE 1SS119
IC1	8-759-208-86	s	IC TMPZ84C011AF-6
IC2	8-759-746-99	s	IC MBM27C512-25
IC3	8-752-331-06	s	IC CXK5864PN-12L
IC4	8-752-323-26	s	IC CXK1009P
IC5	8-759-916-84	s	IC LH0084A
IC6	8-759-938-68	s	IC CXD1095Q
IC7	8-759-916-94	s	IC SN74HC373N
IC8	8-759-045-38	s	IC MC14538BCP
IC9	8-759-916-14	s	IC SN74HC04N
IC10	8-759-917-46	s	IC 74F11PC
IC11	8-759-240-69	s	IC TC4069UBP
IC12	8-759-008-57	s	IC MC34051P
IC13	8-759-916-25	s	IC SN74HC32N
IC14	8-759-916-46	s	IC SN74HC139N
IC15	8-759-916-14	s	IC SN74HC04N
IC16	8-759-146-83	s	IC UPD7564CS-110
IC17	8-759-904-83	s	IC 74F32PC
IC18	8-759-916-20	s	IC SN74HC14N

(SY-145A BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
IC19	8-759-803-70	s	IC SN74HC08N
IC100	8-759-908-23	s	IC MB88303
IC101	8-759-045-38	s	IC MC14538BCP
IC102	8-759-045-38	s	IC MC14538BCP
IC103	8-759-981-64	s	IC LM2903DQ
IC104	8-759-000-27	s	IC MC14017BCP
IC105	8-759-916-29	s	IC SN74HC74N
IC106	8-759-045-38	s	IC MC14538BCP
IC107	8-759-340-13	s	IC HD14013BP
IC200	8-743-915-10	s	IC BX3915A
IC201	8-759-981-64	s	IC LM2903DQ
IC202	8-759-000-27	s	IC MC14017BCP
IC203	8-759-045-38	s	IC MC14538BCP
IC204	8-759-984-95	s	IC MB88201H-652M
IC300	8-759-505-44	s	IC MB88505H-1226M
IC301	8-759-916-21	s	IC SN74HC20N
IC302	8-759-203-05	s	IC TC74HC193P
IC303	8-759-203-05	s	IC TC74HC193P
IC304	8-759-916-25	s	IC SN74HC32N
IC305	8-759-916-29	s	IC SN74HC74N
IC306	8-759-240-71	s	IC TC4071BP
IC307	8-759-916-20	s	IC SN74HC14N
IC308	8-759-803-70	s	IC SN74HC08N
IC309	8-759-916-21	s	IC SN74HC20N
IC310	8-759-916-20	s	IC SN74HC14N
PS1	⚠1-532-679-00	s	LINK, IC 0.6A
Q1	8-729-900-89	s	TRANSISTOR DTC144ES
Q2	8-729-900-65	s	TRANSISTOR DTA144ES
Q3	8-729-900-89	s	TRANSISTOR DTC144ES
Q4	8-729-900-89	s	TRANSISTOR DTC144ES
Q6	8-729-900-89	s	TRANSISTOR DTC144ES
Q7	8-729-900-89	s	TRANSISTOR DTC144ES
Q8	8-729-900-89	s	TRANSISTOR DTC144ES
Q9	8-729-900-89	s	TRANSISTOR DTC144ES
Q10	8-729-900-89	s	TRANSISTOR DTC144ES
Q11	8-729-900-89	s	TRANSISTOR DTC144ES
Q12	8-729-900-89	s	TRANSISTOR DTC144ES
Q13	8-729-178-55	s	TRANSISTOR 2SC2785-E
Q14	8-729-900-65	s	TRANSISTOR DTA144ES
Q15	8-729-900-89	s	TRANSISTOR DTC144ES
Q201	8-729-900-89	s	TRANSISTOR DTC144ES
Q202	8-729-900-89	s	TRANSISTOR DTC144ES
Q203	8-729-900-89	s	TRANSISTOR DTC144ES
Q204	8-729-900-89	s	TRANSISTOR DTC144ES
Q205	8-729-900-89	s	TRANSISTOR DTC144ES
Q206	8-729-900-89	s	TRANSISTOR DTC144ES
Q207	8-729-900-89	s	TRANSISTOR DTC144ES
Q301	8-729-900-89	s	TRANSISTOR DTC144ES
Q302	8-729-900-89	s	TRANSISTOR DTC144ES
Q303	8-729-900-89	s	TRANSISTOR DTC144ES
R1	1-249-433-11	s	CARBON 22K 5% 1/4W
R2	1-249-441-11	s	CARBON 100K 5% 1/4W
R3	1-249-433-11	s	CARBON 22K 5% 1/4W
R4	1-249-421-11	s	CARBON 2.2K 5% 1/4W
R5	1-249-429-11	s	CARBON 10K 5% 1/4W
R6	1-249-405-11	s	CARBON 100 5% 1/4W
R7	1-249-437-11	s	CARBON 47K 5% 1/4W
R8	1-249-437-11	s	CARBON 47K 5% 1/4W

NOTE: Please see pages 14-15 thru 14-18 for the parts that are not listed in the parts list.

(SY-145A BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
R9	1-249-429-11	s	CARBON 10K 5% 1/4W
R10	1-249-433-11	s	CARBON 22K 5% 1/4W
R11	1-249-433-11	s	CARBON 22K 5% 1/4W
R12	1-249-429-11	s	CARBON 10K 5% 1/4W
R13	1-249-429-11	s	CARBON 10K 5% 1/4W
R14	1-249-426-11	s	CARBON 5.6K 5% 1/4W
R15	1-249-433-11	s	CARBON 22K 5% 1/4W
R16	1-249-433-11	s	CARBON 22K 5% 1/4W
R17	1-249-426-11	s	CARBON 5.6K 5% 1/4W
R18	1-249-436-11	s	CARBON 39K 5% 1/4W
R19	1-249-436-11	s	CARBON 39K 5% 1/4W
R20	1-249-437-11	s	CARBON 47K 5% 1/4W
R21	1-249-429-11	s	CARBON 10K 5% 1/4W
R22	1-249-429-11	s	CARBON 10K 5% 1/4W
R24	1-249-405-11	s	CARBON 100 5% 1/4W
R25	1-249-411-11	s	CARBON 330 5% 1/4W
R26	1-249-437-11	s	CARBON 47K 5% 1/4W
R27	1-249-437-11	s	CARBON 47K 5% 1/4W
R28	1-249-437-11	s	CARBON 47K 5% 1/4W
R29	1-249-425-11	s	CARBON 4.7K 5% 1/4W
R30	1-249-429-11	s	CARBON 10K 5% 1/4W
R31	1-249-429-11	s	CARBON 10K 5% 1/4W
R32	1-249-423-11	s	CARBON 3.3K 5% 1/4W
R33	1-249-437-11	s	CARBON 47K 5% 1/4W
R34	1-249-435-11	s	CARBON 33K 5% 1/4W
R35	1-249-437-11	s	CARBON 47K 5% 1/4W
R36	1-249-429-11	s	CARBON 10K 5% 1/4W
R37	1-249-405-11	s	CARBON 100 5% 1/4W
R38	1-249-436-11	s	CARBON 39K 5% 1/4W
R39	1-249-405-11	s	CARBON 100 5% 1/4W
R40	1-249-441-11	s	CARBON 100K 5% 1/4W
R41	1-247-903-00	s	CARBON 1M 5% 1/4W
R42	1-249-425-11	s	CARBON 4.7K 5% 1/4W
R43	1-249-433-11	s	CARBON 22K 5% 1/4W
R44	1-247-903-00	s	CARBON 1M 5% 1/4W
R45	1-249-429-11	s	CARBON 10K 5% 1/4W
R46	1-249-429-11	s	CARBON 10K 5% 1/4W
R47	1-249-437-11	s	CARBON 47K 5% 1/4W
R48	1-249-429-11	s	CARBON 10K 5% 1/4W
R49	1-249-422-11	s	CARBON 2.7K 5% 1/4W
R50	1-249-410-11	s	CARBON 270 5% 1/4W
R51	1-249-429-11	s	CARBON 10K 5% 1/4W
R52	1-249-419-11	s	CARBON 1.5K 5% 1/4W
R53	1-249-405-11	s	CARBON 100 5% 1/4W
R54	1-249-419-11	s	CARBON 1.5K 5% 1/4W
R56	1-249-417-11	s	CARBON 1K 5% 1/4W
R57	1-249-417-11	s	CARBON 1K 5% 1/4W
R58	1-249-429-11	s	CARBON 10K 5% 1/4W
R59	1-249-429-11	s	CARBON 10K 5% 1/4W
R60	1-249-417-11	s	CARBON 1K 5% 1/4W
R61	1-249-417-11	s	CARBON 1K 5% 1/4W
R62	1-249-417-11	s	CARBON 1K 5% 1/4W
R63	1-249-417-11	s	CARBON 1K 5% 1/4W
R64	1-249-417-11	s	CARBON 1K 5% 1/4W
R65	1-249-417-11	s	CARBON 1K 5% 1/4W
R66	1-249-417-11	s	CARBON 1K 5% 1/4W
R67	1-249-417-11	s	CARBON 1K 5% 1/4W
R69	1-249-405-11	s	CARBON 100 5% 1/4W
R70	1-249-405-11	s	CARBON 100 5% 1/4W

(SY-145A BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
R71	1-249-427-11	s	CARBON 6.8K 5% 1/4W
R72	1-249-437-11	s	CARBON 47K 5% 1/4W
R73	1-249-405-11	s	CARBON 100 5% 1/4W
R74	1-249-417-11	s	CARBON 1K 5% 1/4W
R75	1-249-417-11	s	CARBON 1K 5% 1/4W
R76	1-249-417-11	s	CARBON 1K 5% 1/4W
R77	1-249-417-11	s	CARBON 1K 5% 1/4W
R78	1-249-417-11	s	CARBON 1K 5% 1/4W
R79	1-249-417-11	s	CARBON 1K 5% 1/4W
R80	1-249-405-11	s	CARBON 100 5% 1/4W
R81	1-247-881-00	s	CARBON 120K 5% 1/4W
R82	1-247-881-00	s	CARBON 120K 5% 1/4W
R83	1-249-437-11	s	CARBON 47K 5% 1/4W
R84	1-249-425-11	s	CARBON 4.7K 5% 1/4W
R100	1-249-429-11	s	CARBON 10K 5% 1/4W
R101	1-249-437-11	s	CARBON 47K 5% 1/4W
R102	1-249-417-11	s	CARBON 1K 5% 1/4W
R104	1-249-429-11	s	CARBON 10K 5% 1/4W
R106	1-249-417-11	s	CARBON 1K 5% 1/4W
R107	1-249-417-11	s	CARBON 1K 5% 1/4W
R108	1-249-405-11	s	CARBON 100 5% 1/4W
R109	1-215-460-00	s	METAL 43K 1% 1/6W
R111	1-249-434-11	s	CARBON 27K 5% 1/4W
R112	1-249-437-11	s	CARBON 47K 5% 1/4W
R113	1-249-426-11	s	CARBON 5.6K 5% 1/4W
R114	1-249-429-11	s	CARBON 10K 5% 1/4W
R115	1-249-441-11	s	CARBON 100K 5% 1/4W
R116	1-249-429-11	s	CARBON 10K 5% 1/4W
R118	1-249-441-11	s	CARBON 100K 5% 1/4W
R119	1-249-425-11	s	CARBON 4.7K 5% 1/4W
R120	1-249-425-11	s	CARBON 4.7K 5% 1/4W
R150	1-249-417-11	s	CARBON 1K 5% 1/4W
R200	1-249-437-11	s	CARBON 47K 5% 1/4W
R202	1-249-435-11	s	CARBON 33K 5% 1/4W
R207	1-249-421-11	s	CARBON 2.2K 5% 1/4W
R208	1-249-421-11	s	CARBON 2.2K 5% 1/4W
R209	1-249-409-11	s	CARBON 220 5% 1/4W
R210	1-249-427-11	s	CARBON 6.8K 5% 1/4W
R211	1-249-425-11	s	CARBON 4.7K 5% 1/4W
R212	1-215-460-00	s	METAL 43K 1% 1/6W
R213	1-249-434-11	s	CARBON 27K 5% 1/4W
R214	1-249-437-11	s	CARBON 47K 5% 1/4W
R215	1-249-426-11	s	CARBON 5.6K 5% 1/4W
R217	1-249-429-11	s	CARBON 10K 5% 1/4W
R218	1-249-441-11	s	CARBON 100K 5% 1/4W
R219	1-249-441-11	s	CARBON 100K 5% 1/4W
R221	1-249-429-11	s	CARBON 10K 5% 1/4W
R222	1-249-429-11	s	CARBON 10K 5% 1/4W
R223	1-249-417-11	s	CARBON 1K 5% 1/4W
R224	1-249-405-11	s	CARBON 100 5% 1/4W
R225	1-249-405-11	s	CARBON 100 5% 1/4W
R227	1-249-405-11	s	CARBON 100 5% 1/4W
R228	1-249-437-11	s	CARBON 47K 5% 1/4W
R229	1-215-482-00	s	METAL 360K 1% 1/6W
R230	1-249-441-11	s	CARBON 100K 5% 1/4W
R231	1-249-437-11	s	CARBON 47K 5% 1/4W
R301	1-249-441-11	s	CARBON 100K 5% 1/4W
R302	1-249-441-11	s	CARBON 100K 5% 1/4W
R303	1-249-429-11	s	CARBON 10K 5% 1/4W

NOTE: Please see pages 14-15 thru 14-18 for the parts that are not listed in the parts list.

(SY-145A BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
R321	1-249-429-11	s	CARBON 10K 5% 1/4W
R322	1-249-433-11	s	CARBON 22K 5% 1/4W
R323	1-249-433-11	s	CARBON 22K 5% 1/4W
R327	1-249-417-11	s	CARBON 1K 5% 1/4W
R336	1-249-429-11	s	CARBON 10K 5% 1/4W
R337	1-249-429-11	s	CARBON 10K 5% 1/4W
R338	1-249-441-11	s	CARBON 100K 5% 1/4W
R339	1-249-433-11	s	CARBON 22K 5% 1/4W
R343	1-249-405-11	s	CARBON 100 5% 1/4W
R347	1-249-405-11	s	CARBON 100 5% 1/4W
R348	1-249-405-11	s	CARBON 100 5% 1/4W
R349	1-249-417-11	s	CARBON 1K 5% 1/4W
R350	1-249-405-11	s	CARBON 100 5% 1/4W
R351	1-249-429-11	s	CARBON 10K 5% 1/4W
R352	1-247-881-00	s	CARBON 120K 5% 1/4W
R355	1-249-417-11	s	CARBON 1K 5% 1/4W
R356	1-249-417-11	s	CARBON 1K 5% 1/4W
R357	1-249-405-11	s	CARBON 100 5% 1/4W
R358	1-249-405-11	s	CARBON 100 5% 1/4W
R359	1-249-417-11	s	CARBON 1K 5% 1/4W
R360	1-249-405-11	s	CARBON 100 5% 1/4W
R361	1-249-405-11	s	CARBON 100 5% 1/4W
R363	1-249-425-11	s	CARBON 4.7K 5% 1/4W
R364	1-249-437-11	s	CARBON 47K 5% 1/4W
R365	1-249-405-11	s	CARBON 100 5% 1/4W
R366	1-215-445-00	s	METAL 10K 1% 1/6W
R367	1-215-469-00	s	METAL 100K 1% 1/6W
RB3	1-231-410-00	s	RESISTOR BLOCK 10Kx8
RB6	1-235-109-00	s	RESISTOR BLOCK 22KX8
RB10	1-231-410-00	s	RESISTOR BLOCK 10Kx8
RV1	1-230-499-11	s	RES, ADJ METAL 100K
RV2	1-237-505-21	s	RES, ADJ, METAL 50K
X1	1-567-870-11	s	RESONATOR, CERAMIC 614KHz
X2	1-567-132-00	s	RESONATOR, CERAMIC 8.00MHz
X3	1-567-870-11	s	RESONATOR, CERAMIC 614KHz
X4	1-567-132-00	s	RESONATOR, CERAMIC 8.00MHz
X5	1-567-132-00	s	RESONATOR, CERAMIC 8.00MHz

TS-74(LEFT) BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	A-7070-628-A	o	MOUNTED CIRCUIT BOARD, TS-74 (LEFT)
Q715	8-729-700-11	s	NJL7141E-N

TS-74(RIGHT) BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	A-7070-627-A	o	MOUNTED CIRCUIT BOARD, TS-74 (LEFT)
Q715	8-729-700-11	s	NJL7141E-N

NOTE: Please see pages 14-15 thru 14-18 for the parts that are not listed in the parts list.

UR-14E BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1	⚠1-413-249-12	s	SWITCHING REGULATOR, UR-14E
C101	⚠1-161-742-00	s	CERAMIC 2200PF 20% 400V
C102	⚠1-161-742-00	s	CERAMIC 2200PF 20% 400V
C103	⚠1-161-742-00	s	CERAMIC 2200PF 20% 400V
C104	⚠1-161-742-00	s	CERAMIC 2200PF 20% 400V
C105	⚠1-136-185-00	s	FILM 0.22uF 20% 250V
C106	⚠1-136-185-00	s	FILM 0.22uF 20% 250V
C107	⚠1-161-742-00	s	CERAMIC 2200PF 20% 400V
C108	⚠1-161-742-00	s	CERAMIC 2200PF 20% 400V
C109	1-124-961-00	s	ELECT 220 20% 200V
C110	1-124-023-00	s	ELECT 4.7 20% 350V
C111	1-124-023-00	s	ELECT 4.7 20% 350V
C112	1-124-549-00	s	ELECT 100 20% 10V
C113	1-124-961-00	s	ELECT 220 20% 200V
C114	1-124-549-00	s	ELECT 100 20% 10V
C201	1-106-351-00	s	MYLAR 0.0022 5% 200V
C202	1-106-351-00	s	MYLAR 0.0022 5% 200V
C203	1-161-825-11	s	CERAMIC 220PF 10% 500V
C204	1-161-825-11	s	CERAMIC 220PF 10% 500V
C205	1-161-825-11	s	CERAMIC 220PF 10% 500V
C206	1-161-825-11	s	CERAMIC 220PF 10% 500V
C207	1-123-357-00	s	ELECT 22 20% 50V
C209	1-106-351-00	s	MYLAR 0.0022 5% 200V
C210	1-136-153-00	s	MYLAR 0.01 5% 50V
C211	1-106-351-00	s	MYLAR 0.0022 5% 200V
C212	1-124-556-00	s	ELECT 2200 20% 16V
C213	1-124-556-00	s	ELECT 2200 20% 16V
C214	1-124-556-00	s	ELECT 2200 20% 16V
C215	1-124-556-00	s	ELECT 2200 20% 16V
C216	1-123-326-00	s	ELECT 3300 20% 16V
C217	1-123-332-00	s	ELECT 47 20% 50V
C651	1-124-445-00	s	ELECT 100 20% 16V
C652	1-130-591-11	s	MYLAR 3300PF 2% 100V
C653	1-136-141-00	s	MYLAR 1000PF 10% 50V
C654	1-136-165-00	s	MYLAR 0.1 5% 50V
C655	1-123-318-00	s	ELECT 33 16V
CN101	⚠1-560-436-00	o	RECEPTACLE, 3P
	⚠1-561-218-11	o	HOUSING, 3P
	⚠1-561-254-11	o	CONTACT
CN201	1-560-438-00	o	RECEPTACLE, 5P
	1-561-424-11	o	HOUSING, 5P
	1-561-432-11	o	CONTACT
D101	8-719-300-00	s	LB-156
D201	8-719-908-00	s	ESAC33-02CS
D202	8-719-908-00	s	ESAC33-02CS
D203	8-719-900-93	s	V09C
D204	8-719-900-93	s	V09C
D205	8-719-815-55	s	1S1555
D206	8-719-100-61	s	RD11EB2
D208	8-719-101-67	s	RD7.5EL2
D209	8-719-100-30	s	RD5.1EB2
D210	8-719-100-30	s	RD5.1EB2
D651	8-719-200-02	s	10E-2
D652	8-719-100-70	s	RD15EB1
D653	8-719-815-55	s	1S1555
FB101	1-543-060-00	s	CORE

(UR-14E BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
FB102	1-543-060-00	s	CORE
FB201	1-543-060-00	s	CORE
FB202	1-543-060-00	s	CORE
FB203	1-543-060-00	s	CORE
FB204	1-543-060-00	s	CORE
FB205	1-543-060-00	s	CORE
FB206	1-543-060-00	s	CORE
FB207	1-543-060-00	s	CORE
FB208	1-543-060-00	s	CORE
IC651	8-759-937-00	s	MB3759
L101	⚠1-421-848-11	s	LINE FILTER
L201	1-421-849-11	s	CHOKE, 2.4 mH
L203	1-408-316-00	s	CHOKE
L204	1-421-850-11	s	CHOKE, 12
L205	1-421-329-00	s	CHOKE
Q101	8-729-901-72	s	2SC3317
Q102	8-729-901-72	s	2SC3317
Q103	8-729-100-13	s	2SC2001
Q104	8-729-100-13	s	2SC2001
Q201	8-729-606-34	s	2SC2603-G
Q202	8-729-117-54	s	2SA1175-F
R101	1-214-947-00	s	METAL 2.7M 1% 1/2W
R102	⚠1-205-636-11	s	CEMENT 3.3 5% 5W
R103	1-246-529-00	s	CARBON 220k 5% 1/4W
R104	1-246-529-00	s	CARBON 220k 5% 1/4W
R105	⚠1-212-934-00	s	METAL 1 5% 1/2W
R106	1-247-700-11	s	NF CARBON 100 5% 1/4W
R107	1-246-529-00	s	CARBON 220k 5% 1/4W
R108	1-246-529-00	s	CARBON 220k 5% 1/4W
R109	⚠1-212-934-00	s	METAL 1 5% 1/2W
R110	1-247-700-11	s	NF CARBON 100 5% 1/4W
R201	⚠1-206-475-00	s	METAL 33 5% 2W
R202	1-535-369-00	s	SHUNT 0.02 2W
R203	⚠1-213-151-00	s	METAL 4.7k 5% 5W
R204	1-247-713-11	s	NF CARBON 1k 5% 1/4W
R205	1-247-719-11	s	NF CARBON 3.3k 5% 1/4W
R206	1-249-455-11	s	NF CARBON 4.7k 5% 1/4W
R207	1-247-717-11	s	NF CARBON 2.2k 5% 1/4W
R208	1-247-123-00	s	NF CARBON 470 5% 1/4W
R209	1-247-704-11	s	NF CARBON 220 5% 1/4W
R212	1-247-857-00	s	NF CARBON 220 5% 1/2W
R651	1-249-425-11	s	NF CARBON 4.7k 5% 1/6W
RV651	1-228-644-00	s	VAR, METAL 1k 0.3W
T101	⚠1-448-423-11	s	CONVERTER
T102	⚠1-437-120-00	s	DRIVE

NOTE: Please see pages 14-15 thru 14-18 for the parts that are not listed in the parts list.

VO-30 BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	A-7062-152-A	o	MOUNTED CIRCUIT BOARD, VO-30
1pc	3-646-090-00	s	RIVET, NYLON
1pc	3-657-153-00	o	HINGE
1pc	3-738-963-01	o	CASE, SHIELD, VO
1pc	7-682-903-01	s	SCREW +PWH 3X5
C3	1-161-494-00	s	CERAMIC 0.022uF 25V
C6	1-161-021-11	s	CERAMIC 0.047uF 10% 25V
C7	1-130-499-00	s	MYLAR 0.22uF 5% 50V
C11	1-161-379-00	s	CERAMIC 0.01uF 20% 25V
C12	1-161-379-00	s	CERAMIC 0.01uF 20% 25V
C13	1-161-379-00	s	CERAMIC 0.01uF 20% 25V
C14	1-161-379-00	s	CERAMIC 0.01uF 20% 25V
C15	1-161-379-00	s	CERAMIC 0.01uF 20% 25V
C16	1-126-157-11	s	ELECT 10uF 20% 16V
C17	1-161-494-00	s	CERAMIC 0.022uF 25V
C19	1-161-494-00	s	CERAMIC 0.022uF 25V
C20	1-124-360-00	s	ELECT 1000uF 20% 16V
C22	1-107-202-00	s	MICA 10PF 5% 500V
C23	1-107-045-00	s	MICA 3.9PF 500V
C24	1-126-176-11	s	ELECT 220uF 20% 10V
C25	1-130-471-00	s	MYLAR 0.001uF 5% 50V
C26	1-161-379-00	s	CERAMIC 0.01uF 20% 25V
C38	1-107-085-00	s	MICA 100PF 5% 50V
C39	1-161-021-11	s	CERAMIC 0.047uF 10% 25V
C40	1-161-051-00	s	CERAMIC 0.01uF 10% 50V
C51	1-107-157-00	s	MICA 27PF 5% 500V
C54	1-126-157-11	s	ELECT 10uF 20% 16V
C55	1-126-157-11	s	ELECT 10uF 20% 16V
C56	1-161-021-11	s	CERAMIC 0.047uF 10% 25V
C57	1-126-157-11	s	ELECT 10uF 20% 16V
C58	1-107-159-00	s	MICA 33PF 5% 500V
C59	1-126-157-11	s	ELECT 10uF 20% 16V
C60	1-126-157-11	s	ELECT 10uF 20% 16V
C61	1-126-157-11	s	ELECT 10uF 20% 16V
C62	1-161-021-11	s	CERAMIC 0.047uF 10% 25V
C63	1-162-875-11	s	CERAMIC 68PF 5% 50V
C65	1-161-021-11	s	CERAMIC 0.047uF 10% 25V
C102	1-107-085-00	s	MICA 100PF 5% 50V
C103	1-131-341-00	s	TANTALUM 0.1uF 10% 35V
C104	1-162-726-11	s	CERAMIC 470PF 1% 50V
C105	1-130-491-00	s	MYLAR 0.047uF 5% 50V
C108	1-107-085-00	s	MICA 100PF 5% 50V
C109	1-130-499-00	s	MYLAR 0.22uF 5% 50V
C111	1-107-159-00	s	MICA 33PF 5% 500V
C113	1-107-085-00	s	MICA 100PF 5% 50V
C118	1-130-487-00	s	MYLAR 0.022uF 5% 50V
C200	1-161-494-00	s	CERAMIC 0.022uF 25V
C202	1-126-157-11	s	ELECT 10uF 20% 16V
C205	1-126-157-11	s	ELECT 10uF 20% 16V
C206	1-126-157-11	s	ELECT 10uF 20% 16V
C210	1-124-360-00	s	ELECT 1000uF 20% 16V
C212	1-130-487-00	s	MYLAR 0.022uF 5% 50V
C301	1-162-726-11	s	CERAMIC 470PF 1% 50V
C309	1-161-051-00	s	CERAMIC 0.01uF 10% 50V
C325	1-107-209-00	s	MICA 20PF 5% 500V
C328	1-107-210-00	s	MICA 22PF 5% 500V
C329	1-107-207-00	s	MICA 16PF 5% 500V
C405	1-161-494-00	s	CERAMIC 0.022uF 25V
C406	1-161-494-00	s	CERAMIC 0.022uF 25V

(VO-30 BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
C408	1-124-438-00	s	ELECT 1uF 20% 50V
C409	1-109-631-00	s	MICA 330PF 2% 500V
C410	1-130-483-00	s	MYLAR 0.01uF 5% 50V
C411	1-126-157-11	s	ELECT 10uF 20% 16V
C412	1-161-494-00	s	CERAMIC 0.022uF 25V
C414	1-161-494-00	s	CERAMIC 0.022uF 25V
C415	1-126-157-11	s	ELECT 10uF 20% 16V
C417	1-126-176-11	s	ELECT 220uF 20% 10V
C419	1-161-494-00	s	CERAMIC 0.022uF 25V
C420	1-107-158-00	s	MICA 30PF 5% 500V
C422	1-126-157-11	s	ELECT 10uF 20% 16V
C423	1-126-157-11	s	ELECT 10uF 20% 16V
C424	1-126-157-11	s	ELECT 10uF 20% 16V
C425	1-126-157-11	s	ELECT 10uF 20% 16V
C426	1-161-379-00	s	CERAMIC 0.01uF 20% 25V
C427	1-161-379-00	s	CERAMIC 0.01uF 20% 25V
C428	1-161-379-00	s	CERAMIC 0.01uF 20% 25V
C429	1-161-379-00	s	CERAMIC 0.01uF 20% 25V
C430	1-161-494-00	s	CERAMIC 0.022uF 25V
C431	1-161-494-00	s	CERAMIC 0.022uF 25V
C433	1-130-479-00	s	MYLAR 0.0047uF 5% 50V
C434	1-130-471-00	s	MYLAR 0.001uF 5% 50V
C501	1-107-075-00	s	MICA 39PF 5% 50V
C502	1-107-085-00	s	MICA 100PF 5% 50V
C503	1-109-541-00	s	MICA 200PF 5% 100V
C504	1-109-627-00	s	MICA 150PF 2% 500V
C505	1-130-471-00	s	MYLAR 0.001uF 5% 50V
C506	1-161-379-00	s	CERAMIC 0.01uF 20% 25V
C507	1-161-494-00	s	CERAMIC 0.022uF 25V
C509	1-126-157-11	s	ELECT 10uF 20% 16V
C510	1-161-494-00	s	CERAMIC 0.022uF 25V
C511	1-161-494-00	s	CERAMIC 0.022uF 25V
C513	1-161-494-00	s	CERAMIC 0.022uF 25V
C514	1-161-494-00	s	CERAMIC 0.022uF 25V
C515	1-161-494-00	s	CERAMIC 0.022uF 25V
C516	1-130-471-00	s	MYLAR 0.001uF 5% 50V
C517	1-126-157-11	s	ELECT 10uF 20% 16V
C518	1-126-157-11	s	ELECT 10uF 20% 16V
C519	1-126-157-11	s	ELECT 10uF 20% 16V
C520	1-161-494-00	s	CERAMIC 0.022uF 25V
C522	1-124-438-00	s	ELECT 1uF 20% 50V
C523	1-107-208-00	s	MICA 18PF 5% 500V
C525	1-161-494-00	s	CERAMIC 0.022uF 25V
C526	1-126-157-11	s	ELECT 10uF 20% 16V
C527	1-130-487-00	s	MYLAR 0.022uF 5% 50V
C528	1-161-379-00	s	CERAMIC 0.01uF 20% 25V
C529	1-161-494-00	s	CERAMIC 0.022uF 25V
C530	1-161-494-00	s	CERAMIC 0.022uF 25V
C600	1-161-494-00	s	CERAMIC 0.022uF 25V
C602	1-124-438-00	s	ELECT 1uF 20% 50V
C603	1-161-494-00	s	CERAMIC 0.022uF 25V
C604	1-161-021-11	s	CERAMIC 0.047uF 10% 25V
C606	1-161-494-00	s	CERAMIC 0.022uF 25V
C607	1-161-051-00	s	CERAMIC 0.01uF 10% 50V
C608	1-161-051-00	s	CERAMIC 0.01uF 10% 50V
C650	1-107-159-00	s	MICA 33PF 5% 500V
C651	1-109-542-00	s	MICA 220PF 5% 100V
C652	1-109-541-00	s	MICA 200PF 5% 100V
C653	1-109-541-00	s	MICA 200PF 5% 100V

NOTE: Please see pages 14-15 thru 14-18 for the parts that are not listed in the parts list.

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Ref. No. or Q'ty	Part No.	SP	Description
C654	1-130-479-00	s	MYLAR 0.0047uF 5% 50V
C655	1-107-084-00	s	MICA 91PF 5% 50V
C656	1-130-483-00	s	MYLAR 0.01uF 5% 50V
C658	1-161-494-00	s	CERAMIC 0.022uF 25V
C659	1-126-157-11	s	ELECT 10uF 20% 16V
C661	1-107-076-00	s	MICA 43PF 5% 50V
C663	1-107-210-00	s	MICA 22PF 5% 500V
C664	1-107-048-00	s	MICA 6.8PF 500V
C665	1-126-157-11	s	ELECT 10uF 20% 16V
C666	1-107-202-00	s	MICA 10PF 5% 500V
C668	1-161-021-11	s	CERAMIC 0.047uF 10% 25V
C669	1-161-379-00	s	CERAMIC 0.01uF 20% 25V
C670	1-107-165-00	s	MICA 56PF 5% 50V
C671	1-107-085-00	s	MICA 100PF 5% 50V
C672	1-107-202-00	s	MICA 10PF 5% 500V
C673	1-124-438-00	s	ELECT 1uF 20% 50V
C674	1-124-438-00	s	ELECT 1uF 20% 50V
C675	1-161-021-11	s	CERAMIC 0.047uF 10% 25V
C677	1-126-157-11	s	ELECT 10uF 20% 16V
C681	1-126-157-11	s	ELECT 10uF 20% 16V
C682	1-107-210-00	s	MICA 22PF 5% 500V
CN303	1-506-471-11	s	CONNECTOR, 6P, MALE
CN310	1-506-471-11	s	CONNECTOR, 6P, MALE
CV500	1-141-246-00	s	CAP, TRIMMER 20PF
CV650	1-141-246-00	s	CAP, TRIMMER 20PF
D1	8-719-101-97	s	DIODE 1SS97-1
D2	8-719-101-97	s	DIODE 1SS97-1
D3	8-719-101-97	s	DIODE 1SS97-1
D4	8-719-101-97	s	DIODE 1SS97-1
D100	8-719-110-13	s	DIODE RD9.1ES-B2
D101	8-719-911-19	s	DIODE 1SS119
D200	8-719-104-10	s	DIODE 1SS99
D201	8-719-104-10	s	DIODE 1SS99
D301	8-719-911-19	s	DIODE 1SS119
D400	8-719-911-19	s	DIODE 1SS119
D401	8-719-911-19	s	DIODE 1SS119
D402	8-719-104-10	s	DIODE 1SS99
D403	8-719-104-10	s	DIODE 1SS99
D404	8-719-104-10	s	DIODE 1SS99
D405	8-719-104-10	s	DIODE 1SS99
D406	8-719-911-19	s	DIODE 1SS119
D407	8-719-911-19	s	DIODE 1SS119
D500	8-719-911-19	s	DIODE 1SS119
DL2	1-415-551-11	s	DELAY LINE 140NS
DL301	1-415-404-21	s	DELAY LINE 226uS
DL500	1-415-402-11	s	DELAY LINE 300nS
FL201	1-409-410-11	s	FILTER, TRAP 4.4MHz
FL300	1-236-040-11	s	FILTER, LOW-PASS
FL500	1-235-471-11	s	FILTER, LOW-PASS
IC1	8-752-006-12	s	IC CX20061
IC2	8-759-206-29	s	IC TA7060AP-SONY
IC3	8-759-402-33	s	IC AN607P
IC4	8-752-201-30	s	IC CX22013
IC5	8-743-880-00	s	IC BX-388
IC6	8-743-890-00	s	IC BX-389
IC51	8-743-890-00	s	IC BX-389

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Ref. No. or Q'ty	Part No.	SP	Description
IC52	8-759-206-29	s	IC TA7060AP-SONY
IC53	8-759-206-29	s	IC TA7060AP-SONY
IC100	8-759-201-47	s	IC TA7357AP
IC101	8-759-208-10	s	IC TC4053BPHB
IC200	8-759-206-29	s	IC TA7060AP-SONY
IC301	8-743-880-00	s	IC BX-388
IC400	8-759-045-38	s	IC MC14538BCP
IC401	8-749-900-87	s	IC BX1470L
IC402	8-759-922-61	s	IC SN16913P-A
IC403	8-759-206-29	s	IC TA7060AP-SONY
IC500	8-752-006-12	s	IC CX20061
IC501	8-759-982-21	s	IC RC78L05A
IC502	8-759-111-69	s	IC UPC1037HA
IC503	8-743-890-00	s	IC BX-389
IC505	8-752-006-12	s	IC CX20061
IC600	8-741-126-20	s	IC BX1262
IC601	8-752-006-12	s	IC CX20061
IC602	8-743-880-00	s	IC BX-388
IC603	8-752-006-12	s	IC CX20061
L1	1-410-482-31	s	INDUCTOR 100uH
L3	1-410-087-31	s	INDUCTOR 10mH
L4	1-410-087-31	s	INDUCTOR 10mH
L6	1-410-482-31	s	INDUCTOR 100uH
L7	1-410-464-11	s	INDUCTOR 3.3uH
L52	1-410-087-31	s	INDUCTOR 10mH
L53	1-410-476-11	s	INDUCTOR 33uH
L102	1-410-482-31	s	INDUCTOR 100uH
L103	1-410-482-31	s	INDUCTOR 100uH
L203	1-410-087-31	s	INDUCTOR 10mH
L204	1-410-482-31	s	INDUCTOR 100uH
L400	1-410-482-31	s	INDUCTOR 100uH
L401	1-410-482-31	s	INDUCTOR 100uH
L402	1-410-482-31	s	INDUCTOR 100uH
L501	1-410-482-31	s	INDUCTOR 100uH
L502	1-410-482-31	s	INDUCTOR 100uH
L503	1-410-482-31	s	INDUCTOR 100uH
L506	1-410-482-31	s	INDUCTOR 100uH
L600	1-410-482-31	s	INDUCTOR 100uH
L601	1-410-482-31	s	INDUCTOR 100uH
L602	1-410-471-11	s	INDUCTOR 12uH
L603	1-410-476-11	s	INDUCTOR 33uH
L604	1-410-470-11	s	INDUCTOR 10uH
L605	1-410-482-31	s	INDUCTOR 100uH
L650	1-410-470-11	s	INDUCTOR 10uH
L651	1-410-482-31	s	INDUCTOR 100uH
L653	1-410-471-11	s	INDUCTOR 12uH
L654	1-410-482-31	s	INDUCTOR 100uH
LV600	1-407-572-00	s	COIL, VAR 33UH
Q1	8-729-266-92	s	TRANSISTOR 2SC2669-O
Q2	8-729-266-92	s	TRANSISTOR 2SC2669-O
Q4	8-729-266-92	s	TRANSISTOR 2SC2669-O
Q5	8-729-266-92	s	TRANSISTOR 2SC2669-O
Q6	8-729-266-92	s	TRANSISTOR 2SC2669-O
Q7	8-729-266-92	s	TRANSISTOR 2SC2669-O
Q8	8-729-266-92	s	TRANSISTOR 2SC2669-O
Q9	8-729-900-89	s	TRANSISTOR DTC144ES
Q10	8-729-266-92	s	TRANSISTOR 2SC2669-O
Q11	8-729-266-92	s	TRANSISTOR 2SC2669-O

NOTE: Please see pages 14-15 thru 14-18 for the parts that are not listed in the parts list.

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Ref. No. or Q'ty	Part No.	SP	Description
Q12	8-729-266-92	s	TRANSISTOR 2SC2669-O
Q51	8-729-266-92	s	TRANSISTOR 2SC2669-O
Q52	8-729-266-92	s	TRANSISTOR 2SC2669-O
Q53	8-729-900-89	s	TRANSISTOR DTC144ES
Q54	8-729-900-89	s	TRANSISTOR DTC144ES
Q57	8-729-266-92	s	TRANSISTOR 2SC2669-O
Q58	8-729-900-89	s	TRANSISTOR DTC144ES
Q59	8-729-266-92	s	TRANSISTOR 2SC2669-O
Q100	8-729-266-92	s	TRANSISTOR 2SC2669-O
Q101	8-729-119-76	s	TRANSISTOR 2SA1115P
Q102	8-729-201-05	s	TRANSISTOR 2SC2878-B
Q103	8-729-201-05	s	TRANSISTOR 2SC2878-B
Q104	8-729-119-76	s	TRANSISTOR 2SA1115P
Q105	8-729-119-76	s	TRANSISTOR 2SA1115P
Q106	8-729-266-92	s	TRANSISTOR 2SC2669-O
Q107	8-729-281-53	s	TRANSISTOR 2SC1815-GR
Q108	8-729-119-76	s	TRANSISTOR 2SA1115P
Q109	8-729-281-53	s	TRANSISTOR 2SC1815-GR
Q110	8-729-266-92	s	TRANSISTOR 2SC2669-O
Q111	8-729-266-92	s	TRANSISTOR 2SC2669-O
Q112	8-729-266-92	s	TRANSISTOR 2SC2669-O
Q113	8-729-119-78	s	TRANSISTOR 2SC2785-HFE
Q114	8-729-119-78	s	TRANSISTOR 2SC2785-HFE
Q200	8-729-266-92	s	TRANSISTOR 2SC2669-O
Q202	8-729-119-76	s	TRANSISTOR 2SA1115P
Q203	8-729-201-05	s	TRANSISTOR 2SC2878-B
Q204	8-729-266-92	s	TRANSISTOR 2SC2669-O
Q205	8-729-266-92	s	TRANSISTOR 2SC2669-O
Q206	8-729-266-92	s	TRANSISTOR 2SC2669-O
Q207	8-729-266-92	s	TRANSISTOR 2SC2669-O
Q208	8-729-266-92	s	TRANSISTOR 2SC2669-O
Q209	8-729-266-92	s	TRANSISTOR 2SC2669-O
Q210	8-729-119-78	s	TRANSISTOR 2SC2785-HFE
Q211	8-729-119-78	s	TRANSISTOR 2SC2785-HFE
Q301	8-729-119-76	s	TRANSISTOR 2SA1115P
Q310	8-729-266-92	s	TRANSISTOR 2SC2669-O
Q400	8-729-266-92	s	TRANSISTOR 2SC2669-O
Q401	8-729-266-92	s	TRANSISTOR 2SC2669-O
Q402	8-729-266-92	s	TRANSISTOR 2SC2669-O
Q403	8-729-266-92	s	TRANSISTOR 2SC2669-O
Q404	8-729-266-92	s	TRANSISTOR 2SC2669-O
Q405	8-729-266-92	s	TRANSISTOR 2SC2669-O
Q406	8-729-119-76	s	TRANSISTOR 2SA1115P
Q407	8-729-266-92	s	TRANSISTOR 2SC2669-O
Q408	8-729-266-92	s	TRANSISTOR 2SC2669-O
Q409	8-729-266-92	s	TRANSISTOR 2SC2669-O
Q410	8-729-266-92	s	TRANSISTOR 2SC2669-O
Q411	8-729-900-89	s	TRANSISTOR DTC144ES
Q412	8-729-900-65	s	TRANSISTOR DTA144ES
Q413	8-729-900-89	s	TRANSISTOR DTC144ES
Q414	8-729-900-89	s	TRANSISTOR DTC144ES
Q500	8-729-266-92	s	TRANSISTOR 2SC2669-O
Q501	8-729-266-92	s	TRANSISTOR 2SC2669-O
Q502	8-729-266-92	s	TRANSISTOR 2SC2669-O
Q503	8-729-201-05	s	TRANSISTOR 2SC2878-B
Q504	8-729-900-89	s	TRANSISTOR DTC144ES
Q505	8-729-900-89	s	TRANSISTOR DTC144ES
Q506	8-729-266-92	s	TRANSISTOR 2SC2669-O
Q507	8-729-266-92	s	TRANSISTOR 2SC2669-O
Q508	8-729-266-92	s	TRANSISTOR 2SC2669-O
Q509	8-729-266-92	s	TRANSISTOR 2SC2669-O
Q510	8-729-266-92	s	TRANSISTOR 2SC2669-O
Q511	8-729-266-92	s	TRANSISTOR 2SC2669-O
Q512	8-729-266-92	s	TRANSISTOR 2SC2669-O
Q600	8-729-119-76	s	TRANSISTOR 2SA1115P
Q601	8-729-266-92	s	TRANSISTOR 2SC2669-O
Q602	8-729-266-92	s	TRANSISTOR 2SC2669-O
Q603	8-729-266-92	s	TRANSISTOR 2SC2669-O
Q604	8-729-266-92	s	TRANSISTOR 2SC2669-O
Q605	8-729-900-89	s	TRANSISTOR DTC144ES
Q650	8-729-266-92	s	TRANSISTOR 2SC2669-O
Q651	8-729-266-92	s	TRANSISTOR 2SC2669-O
Q652	8-729-266-92	s	TRANSISTOR 2SC2669-O
Q653	8-729-266-92	s	TRANSISTOR 2SC2669-O
Q654	8-729-201-05	s	TRANSISTOR 2SC2878-B
Q655	8-729-266-92	s	TRANSISTOR 2SC2669-O
Q656	8-729-201-05	s	TRANSISTOR 2SC2878-B
Q657	8-729-201-05	s	TRANSISTOR 2SC2878-B
R3	1-249-433-11	s	CARBON 22K 5% 1/4W
R4	1-249-429-11	s	CARBON 10K 5% 1/4W
R5	1-249-417-11	s	CARBON 1K 5% 1/4W
R6	1-215-411-00	s	METAL 390 1% 1/6W
R7	1-249-414-11	s	CARBON 560 5% 1/4W
R8	1-249-417-11	s	CARBON 1K 5% 1/4W
R9	1-249-413-11	s	CARBON 470 5% 1/4W
R10	1-215-405-00	s	METAL 220 1% 1/6W
R11	1-249-416-11	s	CARBON 820 5% 1/4W
R12	1-249-417-11	s	CARBON 1K 5% 1/4W
R13	1-249-418-11	s	CARBON 1.2K 5% 1/4W
R14	1-249-425-11	s	CARBON 4.7K 5% 1/4W
R15	1-215-405-00	s	METAL 220 1% 1/6W
R16	1-215-405-00	s	METAL 220 1% 1/6W
R17	1-249-421-11	s	CARBON 2.2K 5% 1/4W
R20	1-249-423-11	s	CARBON 3.3K 5% 1/4W
R21	1-249-430-11	s	CARBON 12K 5% 1/4W
R22	1-249-433-11	s	CARBON 22K 5% 1/4W
R23	1-215-405-00	s	METAL 220 1% 1/6W
R25	1-215-405-00	s	METAL 220 1% 1/6W
R26	1-249-417-11	s	CARBON 1K 5% 1/4W
R27	1-249-416-11	s	CARBON 820 5% 1/4W
R29	1-249-429-11	s	CARBON 10K 5% 1/4W
R30	1-249-431-11	s	CARBON 15K 5% 1/4W
R31	1-249-410-11	s	CARBON 270 5% 1/4W
R32	1-249-413-11	s	CARBON 470 5% 1/4W
R33	1-249-417-11	s	CARBON 1K 5% 1/4W
R34	1-249-410-11	s	CARBON 270 5% 1/4W
R35	1-249-405-11	s	CARBON 100 5% 1/4W
R36	1-215-438-00	s	METAL 5.1K 1% 1/6W
R37	1-215-394-00	s	METAL 75 1% 1/6W
R38	1-249-441-11	s	CARBON 100K 5% 1/4W
R39	1-249-437-11	s	CARBON 47K 5% 1/4W
R40	1-249-433-11	s	CARBON 22K 5% 1/4W
R41	1-249-417-11	s	CARBON 1K 5% 1/4W
R42	1-249-416-11	s	CARBON 820 5% 1/4W
R43	1-249-411-11	s	CARBON 330 5% 1/4W
R44	1-249-421-11	s	CARBON 2.2K 5% 1/4W
R45	1-249-421-11	s	CARBON 2.2K 5% 1/4W
R46	1-249-421-11	s	CARBON 2.2K 5% 1/4W

NOTE: Please see pages 14-15 thru 14-18 for the parts that are not listed in the parts list.

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Ref. No. or Q'ty	Part No.	SP	Description
R51	1-249-414-11	s	CARBON 560 5% 1/4W
R52	1-249-398-11	s	CARBON 27 5% 1/4W
R53	1-249-411-11	s	CARBON 330 5% 1/4W
R54	1-249-431-11	s	CARBON 15K 5% 1/4W
R55	1-249-429-11	s	CARBON 10K 5% 1/4W
R56	1-249-413-11	s	CARBON 470 5% 1/4W
R57	1-249-413-11	s	CARBON 470 5% 1/4W
R58	1-249-421-11	s	CARBON 2.2K 5% 1/4W
R59	1-249-411-11	s	CARBON 330 5% 1/4W
R60	1-249-437-11	s	CARBON 47K 5% 1/4W
R61	1-249-421-11	s	CARBON 2.2K 5% 1/4W
R62	1-249-433-11	s	CARBON 22K 5% 1/4W
R63	1-215-402-00	s	METAL 160 1% 1/6W
R64	1-249-411-11	s	CARBON 330 5% 1/4W
R67	1-249-421-11	s	CARBON 2.2K 5% 1/4W
R68	1-249-422-11	s	CARBON 2.7K 5% 1/4W
R69	1-215-428-00	s	METAL 2K 1% 1/6W
R70	1-249-418-11	s	CARBON 1.2K 5% 1/4W
R100	1-215-405-00	s	METAL 220 1% 1/6W
R101	1-249-421-11	s	CARBON 2.2K 5% 1/4W
R102	1-249-429-11	s	CARBON 10K 5% 1/4W
R103	1-247-883-00	s	CARBON 150K 5% 1/4W
R104	1-249-425-11	s	CARBON 4.7K 5% 1/4W
R105	1-247-895-00	s	CARBON 470K 5% 1/4W
R106	1-249-430-11	s	CARBON 12K 5% 1/4W
R107	1-249-413-11	s	CARBON 470 5% 1/4W
R108	1-249-423-11	s	CARBON 3.3K 5% 1/4W
R110	1-249-421-11	s	CARBON 2.2K 5% 1/4W
R111	1-249-421-11	s	CARBON 2.2K 5% 1/4W
R112	1-249-425-11	s	CARBON 4.7K 5% 1/4W
R113	1-249-425-11	s	CARBON 4.7K 5% 1/4W
R114	1-215-419-00	s	METAL 820 1% 1/6W
R115	1-215-416-00	s	METAL 620 1% 1/6W
R116	1-249-421-11	s	CARBON 2.2K 5% 1/4W
R117	1-249-406-11	s	CARBON 120 5% 1/4W
R118	1-249-406-11	s	CARBON 120 5% 1/4W
R119	1-249-424-11	s	CARBON 3.9K 5% 1/4W
R120	1-249-424-11	s	CARBON 3.9K 5% 1/4W
R121	1-249-417-11	s	CARBON 1K 5% 1/4W
R122	1-249-424-11	s	CARBON 3.9K 5% 1/4W
R123	1-249-417-11	s	CARBON 1K 5% 1/4W
R124	1-249-425-11	s	CARBON 4.7K 5% 1/4W
R125	1-249-436-11	s	CARBON 39K 5% 1/4W
R126	1-249-429-11	s	CARBON 10K 5% 1/4W
R127	1-249-437-11	s	CARBON 47K 5% 1/4W
R128	1-249-429-11	s	CARBON 10K 5% 1/4W
R129	1-249-425-11	s	CARBON 4.7K 5% 1/4W
R130	1-249-423-11	s	CARBON 3.3K 5% 1/4W
R131	1-249-417-11	s	CARBON 1K 5% 1/4W
R132	1-249-433-11	s	CARBON 22K 5% 1/4W
R133	1-249-433-11	s	CARBON 22K 5% 1/4W
R134	1-249-421-11	s	CARBON 2.2K 5% 1/4W
R135	1-249-429-11	s	CARBON 10K 5% 1/4W
R136	1-249-413-11	s	CARBON 470 5% 1/4W
R137	1-249-418-11	s	CARBON 1.2K 5% 1/4W
R138	1-249-417-11	s	CARBON 1K 5% 1/4W
R139	1-249-428-11	s	CARBON 8.2K 5% 1/4W
R140	1-249-429-11	s	CARBON 10K 5% 1/4W
R141	1-249-426-11	s	CARBON 5.6K 5% 1/4W

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Ref. No. or Q'ty	Part No.	SP	Description
R142	1-249-405-11	s	CARBON 100 5% 1/4W
R143	1-249-422-11	s	CARBON 2.7K 5% 1/4W
R144	1-249-429-11	s	CARBON 10K 5% 1/4W
R145	1-249-423-11	s	CARBON 3.3K 5% 1/4W
R146	1-249-401-11	s	CARBON 47 5% 1/4W
R147	1-249-401-11	s	CARBON 47 5% 1/4W
R149	1-215-394-00	s	METAL 75 1% 1/6W
R150	1-215-394-00	s	METAL 75 1% 1/6W
R151	1-247-903-00	s	CARBON 1M 5% 1/4W
R152	1-249-441-11	s	CARBON 100K 5% 1/4W
R153	1-249-441-11	s	CARBON 100K 5% 1/4W
R200	1-249-433-11	s	CARBON 22K 5% 1/4W
R201	1-249-432-11	s	CARBON 18K 5% 1/4W
R203	1-215-414-00	s	METAL 510 1% 1/6W
R204	1-215-419-00	s	METAL 820 1% 1/6W
R207	1-249-421-11	s	CARBON 2.2K 5% 1/4W
R208	1-249-416-11	s	CARBON 820 5% 1/4W
R209	1-249-433-11	s	CARBON 22K 5% 1/4W
R210	1-249-433-11	s	CARBON 22K 5% 1/4W
R211	1-249-423-11	s	CARBON 3.3K 5% 1/4W
R212	1-215-424-00	s	METAL 1.3K 1% 1/6W
R214	1-215-416-00	s	METAL 620 1% 1/6W
R215	1-249-421-11	s	CARBON 2.2K 5% 1/4W
R216	1-215-421-00	s	METAL 1K 1% 1/6W
R217	1-215-397-00	s	METAL 100 1% 1/6W
R218	1-249-417-11	s	CARBON 1K 5% 1/4W
R219	1-249-429-11	s	CARBON 10K 5% 1/4W
R220	1-249-417-11	s	CARBON 1K 5% 1/4W
R221	1-249-418-11	s	CARBON 1.2K 5% 1/4W
R222	1-249-417-11	s	CARBON 1K 5% 1/4W
R223	1-249-429-11	s	CARBON 10K 5% 1/4W
R224	1-249-428-11	s	CARBON 8.2K 5% 1/4W
R225	1-249-426-11	s	CARBON 5.6K 5% 1/4W
R226	1-249-421-11	s	CARBON 2.2K 5% 1/4W
R227	1-249-405-11	s	CARBON 100 5% 1/4W
R228	1-249-429-11	s	CARBON 10K 5% 1/4W
R229	1-249-423-11	s	CARBON 3.3K 5% 1/4W
R230	1-249-401-11	s	CARBON 47 5% 1/4W
R231	1-249-401-11	s	CARBON 47 5% 1/4W
R232	1-215-394-00	s	METAL 75 1% 1/6W
R301	1-249-429-11	s	CARBON 10K 5% 1/4W
R302	1-249-417-11	s	CARBON 1K 5% 1/4W
R303	1-249-417-11	s	CARBON 1K 5% 1/4W
R305	1-215-438-00	s	METAL 5.1K 1% 1/6W
R306	1-215-394-00	s	METAL 75 1% 1/6W
R307	1-249-441-11	s	CARBON 100K 5% 1/4W
R335	1-215-431-00	s	METAL 2.7K 1% 1/6W
R337	1-249-405-11	s	CARBON 100 5% 1/4W
R338	1-215-421-00	s	METAL 1K 1% 1/6W
R341	1-249-421-11	s	CARBON 2.2K 5% 1/4W
R401	1-249-433-11	s	CARBON 22K 5% 1/4W
R402	1-249-433-11	s	CARBON 22K 5% 1/4W
R403	1-249-421-11	s	CARBON 2.2K 5% 1/4W
R405	1-249-433-11	s	CARBON 22K 5% 1/4W
R406	1-249-433-11	s	CARBON 22K 5% 1/4W
R407	1-249-421-11	s	CARBON 2.2K 5% 1/4W
R408	1-249-424-11	s	CARBON 3.9K 5% 1/4W
R409	1-249-441-11	s	CARBON 100K 5% 1/4W
R410	1-249-424-11	s	CARBON 3.9K 5% 1/4W

NOTE: Please see pages 14-15 thru 14-18 for the parts that are not listed in the parts list.

(VO-30 BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
R411	1-249-429-11	s	CARBON 10K 5% 1/4W
R412	1-249-425-11	s	CARBON 4.7K 5% 1/4W
R413	1-249-429-11	s	CARBON 10K 5% 1/4W
R414	1-249-423-11	s	CARBON 3.3K 5% 1/4W
R415	1-249-429-11	s	CARBON 10K 5% 1/4W
R416	1-249-417-11	s	CARBON 1K 5% 1/4W
R417	1-249-425-11	s	CARBON 4.7K 5% 1/4W
R418	1-249-413-11	s	CARBON 470 5% 1/4W
R419	1-249-417-11	s	CARBON 1K 5% 1/4W
R420	1-249-425-11	s	CARBON 4.7K 5% 1/4W
R421	1-249-425-11	s	CARBON 4.7K 5% 1/4W
R422	1-249-410-11	s	CARBON 270 5% 1/4W
R423	1-249-437-11	s	CARBON 47K 5% 1/4W
R424	1-249-429-11	s	CARBON 10K 5% 1/4W
R425	1-249-433-11	s	CARBON 22K 5% 1/4W
R426	1-249-433-11	s	CARBON 22K 5% 1/4W
R427	1-249-427-11	s	CARBON 6.8K 5% 1/4W
R428	1-249-433-11	s	CARBON 22K 5% 1/4W
R429	1-249-424-11	s	CARBON 3.9K 5% 1/4W
R430	1-249-414-11	s	CARBON 560 5% 1/4W
R431	1-249-433-11	s	CARBON 22K 5% 1/4W
R433	1-249-423-11	s	CARBON 3.3K 5% 1/4W
R434	1-249-421-11	s	CARBON 2.2K 5% 1/4W
R435	1-249-405-11	s	CARBON 100 5% 1/4W
R436	1-249-422-11	s	CARBON 2.7K 5% 1/4W
R437	1-249-418-11	s	CARBON 1.2K 5% 1/4W
R438	1-249-413-11	s	CARBON 470 5% 1/4W
R439	1-215-432-00	s	METAL 3K 1% 1/6W
R440	1-249-415-11	s	CARBON 680 5% 1/4W
R441	1-249-417-11	s	CARBON 1K 5% 1/4W
R442	1-249-417-11	s	CARBON 1K 5% 1/4W
R443	1-249-429-11	s	CARBON 10K 5% 1/4W
R444	1-249-426-11	s	CARBON 5.6K 5% 1/4W
R445	1-249-423-11	s	CARBON 3.3K 5% 1/4W
R446	1-249-405-11	s	CARBON 100 5% 1/4W
R447	1-249-429-11	s	CARBON 10K 5% 1/4W
R448	1-249-404-00	s	CARBON 82 5% 1/4W
R449	1-249-425-11	s	CARBON 4.7K 5% 1/4W
R450	1-249-437-11	s	CARBON 47K 5% 1/4W
R451	1-249-437-11	s	CARBON 47K 5% 1/4W
R500	1-249-431-11	s	CARBON 15K 5% 1/4W
R501	1-249-431-11	s	CARBON 15K 5% 1/4W
R502	1-249-417-11	s	CARBON 1K 5% 1/4W
R503	1-249-421-11	s	CARBON 2.2K 5% 1/4W
R504	1-249-432-11	s	CARBON 18K 5% 1/4W
R506	1-249-416-11	s	CARBON 820 5% 1/4W
R507	1-249-429-11	s	CARBON 10K 5% 1/4W
R508	1-249-423-11	s	CARBON 3.3K 5% 1/4W
R509	1-249-417-11	s	CARBON 1K 5% 1/4W
R510	1-249-417-11	s	CARBON 1K 5% 1/4W
R511	1-249-417-11	s	CARBON 1K 5% 1/4W
R512	1-249-417-11	s	CARBON 1K 5% 1/4W
R513	1-249-411-11	s	CARBON 330 5% 1/4W
R514	1-249-417-11	s	CARBON 1K 5% 1/4W
R515	1-249-417-11	s	CARBON 1K 5% 1/4W
R516	1-249-423-11	s	CARBON 3.3K 5% 1/4W
R517	1-249-437-11	s	CARBON 47K 5% 1/4W
R518	1-249-437-11	s	CARBON 47K 5% 1/4W
R519	1-249-429-11	s	CARBON 10K 5% 1/4W

(VO-30 BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
R520	1-249-441-11	s	CARBON 100K 5% 1/4W
R521	1-249-403-11	s	CARBON 68 5% 1/4W
R522	1-249-421-11	s	CARBON 2.2K 5% 1/4W
R523	1-249-429-11	s	CARBON 10K 5% 1/4W
R524	1-249-429-11	s	CARBON 10K 5% 1/4W
R525	1-249-429-11	s	CARBON 10K 5% 1/4W
R526	1-249-425-11	s	CARBON 4.7K 5% 1/4W
R527	1-249-421-11	s	CARBON 2.2K 5% 1/4W
R530	1-249-433-11	s	CARBON 22K 5% 1/4W
R531	1-249-429-11	s	CARBON 10K 5% 1/4W
R532	1-249-417-11	s	CARBON 1K 5% 1/4W
R533	1-249-417-11	s	CARBON 1K 5% 1/4W
R534	1-249-421-11	s	CARBON 2.2K 5% 1/4W
R535	1-249-417-11	s	CARBON 1K 5% 1/4W
R536	1-249-421-11	s	CARBON 2.2K 5% 1/4W
R537	1-249-429-11	s	CARBON 10K 5% 1/4W
R538	1-249-433-11	s	CARBON 22K 5% 1/4W
R539	1-249-433-11	s	CARBON 22K 5% 1/4W
R540	1-249-417-11	s	CARBON 1K 5% 1/4W
R541	1-249-417-11	s	CARBON 1K 5% 1/4W
R542	1-249-417-11	s	CARBON 1K 5% 1/4W
R558	1-249-425-11	s	CARBON 4.7K 5% 1/4W
R559	1-249-417-11	s	CARBON 1K 5% 1/4W
R600	1-249-429-11	s	CARBON 10K 5% 1/4W
R601	1-247-883-00	s	CARBON 150K 5% 1/4W
R603	1-249-429-11	s	CARBON 10K 5% 1/4W
R604	1-249-405-11	s	CARBON 100 5% 1/4W
R605	1-249-429-11	s	CARBON 10K 5% 1/4W
R606	1-249-429-11	s	CARBON 10K 5% 1/4W
R607	1-249-413-11	s	CARBON 470 5% 1/4W
R608	1-215-409-00	s	METAL 330 1% 1/6W
R609	1-249-413-11	s	CARBON 470 5% 1/4W
R610	1-249-414-11	s	CARBON 560 5% 1/4W
R611	1-249-413-11	s	CARBON 470 5% 1/4W
R612	1-215-409-00	s	METAL 330 1% 1/6W
R613	1-249-417-11	s	CARBON 1K 5% 1/4W
R614	1-249-437-11	s	CARBON 47K 5% 1/4W
R615	1-249-437-11	s	CARBON 47K 5% 1/4W
R618	1-215-438-00	s	METAL 5.1K 1% 1/6W
R619	1-215-394-00	s	METAL 75 1% 1/6W
R620	1-249-441-11	s	CARBON 100K 5% 1/4W
R621	1-249-429-11	s	CARBON 10K 5% 1/4W
R622	1-249-438-11	s	CARBON 56K 5% 1/4W
R623	1-249-414-11	s	CARBON 560 5% 1/4W
R650	1-249-431-11	s	CARBON 15K 5% 1/4W
R651	1-249-417-11	s	CARBON 1K 5% 1/4W
R652	1-215-418-00	s	METAL 750 1% 1/6W
R653	1-249-431-11	s	CARBON 15K 5% 1/4W
R654	1-249-431-11	s	CARBON 15K 5% 1/4W
R655	1-249-417-11	s	CARBON 1K 5% 1/4W
R656	1-249-431-11	s	CARBON 15K 5% 1/4W
R657	1-249-433-11	s	CARBON 22K 5% 1/4W
R658	1-249-432-11	s	CARBON 18K 5% 1/4W
R659	1-249-429-11	s	CARBON 10K 5% 1/4W
R661	1-249-417-11	s	CARBON 1K 5% 1/4W
R663	1-249-417-11	s	CARBON 1K 5% 1/4W
R664	1-249-417-11	s	CARBON 1K 5% 1/4W
R665	1-249-413-11	s	CARBON 470 5% 1/4W
R666	1-249-437-11	s	CARBON 47K 5% 1/4W

NOTE: Please see pages 14-15 thru 14-18 for the parts that are not listed in the parts list.

(VO-30 BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
R667	1-249-418-11	s	CARBON 1.2K 5% 1/4W
R668	1-249-417-11	s	CARBON 1K 5% 1/4W
R669	1-249-441-11	s	CARBON 100K 5% 1/4W
R670	1-249-441-11	s	CARBON 100K 5% 1/4W
R671	1-249-413-11	s	CARBON 470 5% 1/4W
RV1	1-228-991-00	s	RES, ADJ, METAL 2.2K
RV2	1-228-994-00	s	RES, ADJ, METAL 10K
RV3	1-228-991-00	s	RES, ADJ, METAL 2.2K
RV4	1-228-991-00	s	RES, ADJ, METAL 2.2K
RV5	1-228-990-00	s	RES, ADJ, METAL 1K
RV51	1-228-990-00	s	RES, ADJ, METAL 1K
RV52	1-228-990-00	s	RES, ADJ, METAL 1K
RV100	1-228-993-00	s	RES, ADJ, METAL 4.7K
RV101	1-228-991-00	s	RES, ADJ, METAL 2.2K
RV201	1-228-991-00	s	RES, ADJ, METAL 2.2K
RV302	1-228-991-00	s	RES, ADJ, METAL 2.2K
RV400	1-228-995-00	s	RES, ADJ, METAL 22K
RV401	1-228-994-00	s	RES, ADJ, METAL 10K
RV402	1-228-991-00	s	RES, ADJ, METAL 2.2K
RV403	1-228-993-00	s	RES, ADJ, METAL 4.7K
RV404	1-228-991-00	s	RES, ADJ, METAL 2.2K
RV405	1-228-998-00	s	RES, ADJ, METAL 220K
RV501	1-228-989-00	s	RES, ADJ, METAL 470
RV600	1-228-996-00	s	RES, ADJ, METAL 47K
RV601	1-228-990-00	s	RES, ADJ, METAL 1K
RV602	1-228-993-00	s	RES, ADJ, METAL 4.7K
TH400	1-800-200-00	s	THERMISTOR S-3K
TH401	1-800-200-00	s	THERMISTOR S-3K
X500	1-527-511-00	s	CRYSTAL 5.119166MHz
X650	1-527-374-00	s	CRYSTAL 5.35742180MHz

YC-46 BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	A-7062-153-A	o	MOUNTED CIRCUIT BOARD, YC-46
C101	1-130-483-00	s	MYLAR 0.01uF 5% 50V
C108	1-130-483-00	s	MYLAR 0.01uF 5% 50V
C110	1-107-210-00	s	MICA 22PF 5% 500V
C115	1-130-483-00	s	MYLAR 0.01uF 5% 50V
C117	1-107-080-91	s	MICA 62PF 5% 50V
C118	1-107-209-91	s	MICA 20PF 5% 500
C120	1-107-075-91	s	MICA 39PF 5% 50V
C121	1-107-082-91	s	MICA 75PF 5% 50V
C150	1-107-085-00	s	MICA 100PF 5% 50V
C201	1-130-483-00	s	MYLAR 0.01uF 5% 50V
C202	1-107-087-00	s	MICA 120PF 5% 50V
C203	1-130-483-00	s	MYLAR 0.01uF 5% 50V
C204	1-130-491-00	s	MYLAR 0.047uF 5% 50V
C206	1-130-483-00	s	MYLAR 0.01uF 5% 50V
C207	1-130-491-00	s	MYLAR 0.047uF 5% 50V
C208	1-130-491-00	s	MYLAR 0.047uF 5% 50V
C209	1-130-491-00	s	MYLAR 0.047uF 5% 50V
C210	1-130-491-00	s	MYLAR 0.047uF 5% 50V
C211	1-107-202-91	s	MICA 10PF 5% 500
C212	1-130-491-00	s	MYLAR 0.047uF 5% 50V
C213	1-130-491-00	s	MYLAR 0.047uF 5% 50V
C214	1-130-491-00	s	MYLAR 0.047uF 5% 50V
D106	8-719-911-19	s	DIODE 1SS119
D107	8-719-911-19	s	DIODE 1SS119
D108	8-719-911-19	s	DIODE 1SS119
D109	8-719-911-19	s	DIODE 1SS119
FL100	1-235-475-12	s	FILTER, LOW-PASS
FL102	1-236-564-11	s	FILTER, LOW-PASS
FL200	1-236-835-11	s	FILTER, BANDPASS
IC100	8-752-006-12	s	IC CX20061
IC101	8-752-006-12	s	IC CX20061
IC200	8-752-006-12	s	IC CX20061
IC201	8-752-006-12	s	IC CX20061
L100	1-410-482-31	s	INDUCTOR 100uH
L101	1-410-482-31	s	INDUCTOR 100uH
L103	1-410-473-11	s	INDUCTOR 18uH
L200	1-410-482-31	s	INDUCTOR 100uH
L201	1-410-482-31	s	INDUCTOR 100uH
Q100	8-729-119-78	s	TRANSISTOR 2SC2785-HFE
Q101	8-729-119-78	s	TRANSISTOR 2SC2785-HFE
Q102	8-729-119-78	s	TRANSISTOR 2SC2785-HFE
Q103	8-729-119-78	s	TRANSISTOR 2SC2785-HFE
Q104	8-729-119-78	s	TRANSISTOR 2SC2785-HFE
Q105	8-729-119-78	s	TRANSISTOR 2SC2785-HFE
Q106	8-729-900-89	s	TRANSISTOR DTC144ES
Q107	8-729-900-89	s	TRANSISTOR DTC144ES
Q109	8-729-900-89	s	TRANSISTOR DTC144ES
Q110	8-729-900-89	s	TRANSISTOR DTC144ES
Q200	8-729-119-78	s	TRANSISTOR 2SC2785-HFE
Q201	8-729-119-78	s	TRANSISTOR 2SC2785-HFE
Q202	8-729-119-78	s	TRANSISTOR 2SC2785-HFE
Q203	8-729-119-78	s	TRANSISTOR 2SC2785-HFE
Q204	8-729-119-78	s	TRANSISTOR 2SC2785-HFE
Q205	8-729-119-78	s	TRANSISTOR 2SC2785-HFE
R101	1-249-430-11	s	CARBON 12K 5% 1/4W

NOTE: Please see pages 14-15 thru 14-18 for the parts that are not listed in the parts list.

(YC-46 BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
R102	1-249-429-11	s	CARBON 10K 5% 1/4W
R103	1-249-417-11	s	CARBON 1K 5% 1/4W
R105	1-215-414-00	s	METAL 510 1% 1/6W
R106	1-249-429-11	s	CARBON 10K 5% 1/4W
R107	1-215-407-00	s	METAL 270 1% 1/6W
R108	1-215-429-00	s	METAL 2.2K 1% 1/6W
R109	1-247-830-11	s	CARBON 910 5% 1/4W
R111	1-249-433-11	s	CARBON 22K 5% 1/4W
R112	1-249-437-11	s	CARBON 47K 5% 1/4W
R113	1-249-421-11	s	CARBON 2.2K 5% 1/4W
R115	1-215-421-00	s	METAL 1K 1% 1/6W
R116	1-249-421-11	s	CARBON 2.2K 5% 1/4W
R117	1-249-432-11	s	CARBON 18K 5% 1/4W
R118	1-215-428-00	s	METAL 2K 1% 1/6W
R119	1-215-429-00	s	METAL 2.2K 1% 1/6W
R120	1-249-429-11	s	CARBON 10K 5% 1/4W
R121	1-215-414-00	s	METAL 510 1% 1/6W
R122	1-249-417-11	s	CARBON 1K 5% 1/4W
R123	1-215-422-00	s	METAL 1.1K 1% 1/6W
R124	1-249-432-11	s	CARBON 18K 5% 1/4W
R125	1-249-429-11	s	CARBON 10K 5% 1/4W
R126	1-249-406-11	s	CARBON 120 5% 1/4W
R129	1-215-428-00	s	METAL 2K 1% 1/6W
R130	1-249-421-11	s	CARBON 2.2K 5% 1/4W
R131	1-249-426-11	s	CARBON 5.6K 5% 1/4W
R201	1-215-417-00	s	METAL 680 1% 1/6W
R203	1-215-423-00	s	METAL 1.2K 1% 1/6W
R204	1-249-419-11	s	CARBON 1.5K 5% 1/4W
R205	1-249-434-11	s	CARBON 27K 5% 1/4W
R206	1-249-433-11	s	CARBON 22K 5% 1/4W
R207	1-249-425-11	s	CARBON 4.7K 5% 1/4W
R208	1-249-433-11	s	CARBON 22K 5% 1/4W
R209	1-249-429-11	s	CARBON 10K 5% 1/4W
R210	1-249-421-11	s	CARBON 2.2K 5% 1/4W
R211	1-249-432-11	s	CARBON 18K 5% 1/4W
R212	1-249-429-11	s	CARBON 10K 5% 1/4W
R213	1-215-421-00	s	METAL 1K 1% 1/6W
R214	1-215-421-00	s	METAL 1K 1% 1/6W
R215	1-249-438-11	s	CARBON 56K 5% 1/4W
R216	1-249-437-11	s	CARBON 47K 5% 1/4W
R217	1-249-421-11	s	CARBON 2.2K 5% 1/4W
R218	1-215-415-00	s	METAL 560 1% 1/6W
R219	1-215-415-00	s	METAL 560 1% 1/6W
R220	1-215-429-00	s	METAL 2.2K 1% 1/6W
R222	1-249-432-11	s	CARBON 18K 5% 1/4W
R223	1-249-429-11	s	CARBON 10K 5% 1/4W
R224	1-249-399-11	s	CARBON 33 5% 1/4W
R225	1-215-423-00	s	METAL 1.2K 1% 1/6W

FRAME

Ref. No. or Q'ty	Part No.	SP	Description
1pc	A-7048-389-A	s	DRUM ASS'Y, DGH-68A-R
1pc	A-7049-328-A	s	DRUM ASS'Y, DGH-68-R
1pc	⚠ 1-532-203-00	s	FUSE, TIME-LAG
1pc	1-535-535-11	s	TERMINAL, SHAFT GROUND
1pc	1-555-724-00	o	WIRE, GROUND
C901	1-161-057-00	s	CERAMIC 0.033uF 10% 50V
C1001	1-161-057-00	s	CERAMIC 0.033uF 10% 50V
CN1001	1-561-577-21	s	CONNECTOR, 8P, FEMALE "MONITOR TV"
CN1002	1-507-467-00	s	JACK, PIN 1P, FEMALE "MONITOR, AUDIO"
CN1003	1-562-227-21	s	CONNECTOR, BNC, FEMALE "MONITOR VIDEO"
CN1004	1-562-227-21	s	CONNECTOR, BNC, FEMALE "VIDEO IN"
CN1005	1-562-227-21	s	CONNECTOR, BNC, FEMALE "SYNC IN"
CN1006	1-562-227-21	s	CONNECTOR, BNC, FEMALE "VIDEO OUT"
CN1007	1-563-029-21	s	CONNECTOR, XLR 3P, FEMALE "AUDIO LINE IN CH-1/L"
CN1008	1-563-029-21	s	CONNECTOR, XLR 3P, FEMALE "AUDIO LINE IN CH-2/R"
CN1007	1-566-850-31	s	CONNECTOR (S), TERMINAL 4P "S VIDEO IN"
CN1008	1-566-850-31	s	CONNECTOR (S), TERMINAL 4P "S VIDEO OUT"
CN1009	1-507-797-21	s	JACK, LARGE TYPE 2P
CN1011	1-507-854-00	s	JACK, PHONE "HEADPHONES"
CN1012	1-563-030-21	s	CONNECTOR, XLR 3P, MALE "AUDIO LINE OUT CH-1/L"
CN1013	1-563-030-21	s	CONNECTOR, XLR 3P, MALE "AUDIO LINI OUT CH-2/R"
CN1014	1-561-045-00	s	CONNECTOR, RF, FEMALE "DUB OUT"
CN1016	⚠1-560-222-11	s	INLET, AC 3P, MALE "AC IN"
CS1001	1-806-682-51	s	SENSOR, CONDENSATION
M1002	8-835-304-11	s	MOTOR, DC U-11B "REEL"
M1003	8-835-364-01	s	MOTOR, DC BHF-2802B "CAPSTAN"
M1005	8-835-138-01	s	MOTOR, DC (DNR-5301B)
M1006	1-541-360-21	s	MOTOR, FAN
ME1001	1-520-506-11	s	METER AUDIO LEVEL CH-1
ME1002	1-520-506-11	s	METER AUDIO LEVEL CH-2
PM1001	⚠1-454-377-31	s	SOLENOID "BRAKE"
S1001	⚠1-570-117-41	s	SWITCH, ROCKER "POWER"
S1002	1-553-226-00	s	SWITCH, LEAF "CASSETTE DOWN"
S1003	1-570-407-11	s	SWITCH, SLIDE "CASSETTE IN"
S1010	1-572-298-21	s	SWITCH, PUSH (3 KEY) "REC PROOF/MPHG/ME/MP"

NOTE: Please see pages 14-15 thru 14-18 for the parts that are not listed in the parts list.

14-4. PACKING MATERIAL AND ACCESSORIES

Ref. No. or Q'ty	Part No.	SP	Description
1	⚠1-556-761-11	s	CORD, POWER (3 CORE)
1	3-701-630-00	s	BAG, POLYETHYLENE
1	3-701-648-00	s	BAG, POLYETHYLENE
1	3-738-942-01	o	CUSHION (LOWER)
1	3-738-943-01	o	CUSHION (UPPER)
1	3-738-952-01	o	SPACER
1	3-738-959-01	o	INDIVIDUAL CARTON
1	⚠3-750-690-41	s	MANUAL, INSTRUCTION

14-5. FIXTURE (OPTION)

Part No.	SP	Description
Y-2031-001-1	o	CLEANING FLUID
J-6080-824-A	o	FWD,REV WINDING TORQUE CASSETTE
J-6080-825-A	o	MODE SELECTOR
J-6080-826-A	o	NO.6 GUIDE LOCK SCREW DRIVER
J-6080-827-A	o	DIAL TENSION GAUGE
J-6080-831-A	o	TENSION MEASUREMENT REEL
J-6080-832-A	o	TENSION MEASUREMENT REEL
J-6080-840-A	o	SMALL ADJUSTMENT MIRROR
J-6080-883-A	o	RE/SWP CONNECTOR
J-6080-884-A	o	CTL CONNECTOR
J-6080-891-A	o	TRACK SHIFT TOOL
7-700-766-01	o	HEXAGONAL SCREWDRIVER
7-741-900-53	o	WIPING CLOTH
8-967-992-17	o	ALIGNMENT TAPE, WR2-3CS
8-967-995-07	o	ALIGNMENT TAPE, WR5-1CP
8-967-995-18	o	ALIGNMENT TAPE, WR5-7CE
8-967-995-47	o	ALIGNMENT TPPE, WR5-4CSP
8-967-995-48	o	ALIGNMETN TAPE, WR5-8CSE

NOTE: Please see pages 14-15 thru 14-18 for the parts that are not listed in the parts list.

SPECIFICATIONS

System

Recording system	Rotary 2-head helical scan Luminance: FM recording Color signal: converted subcarrier direct recording
Video signal system	CCIR standards, PAL color
Audio recording system	Normal recording AFM: Rotary head, FM system (monaural) PCM: PCM format (two channels)

Video

Inputs	VIDEO IN (BNC type) × 1 1.0 Vp-p±0.3 Vp-p, 75 ohms, unbalanced, sync negative S-VIDEO IN (4-pin mini-DIN) × 1 Luminance: 1.0 V p-p, 75 ohms, unbalanced, sync negative Chrominance: 0.3 V p-p at burst level, 75 ohms, unbalanced
Outputs	VIDEO OUT (BNC type) × 1 1.0 Vp-p±0.2 Vp-p, 75 ohms, unbalanced, sync negative DUB OUT (7-pin) × 1 MONITOR TV (8-pin) × 1 MONITOR VIDEO (BNC type) × 1 S-VIDEO OUT (4-pin mini-DIN) × 1 Luminance: 1.0 V p-p, 75 ohms, unbalanced, sync negative Chrominance: 0.3 V p-p at burst level, 75 ohms, unbalanced
Horizontal resolution	Hi8 mode recording: 400 lines (both B/W and color) (S-VIDEO signals)
S/N	Hi8 mode 45 dB (with ME tape) Conventional format 45 dB (color)
Sync signal input	SYNC IN (BNC type) × 1 2.5 Vp-p (1 to 5 Vp-p), 75 ohms, unbalanced
Recording level control	Automatic

Audio

Input	AUDIO LINE IN CH-1/L, CH-2/R (XLR 3-pin female) × 1 each +4 dB, 10 k ohms, balanced MICROPHONES CH-1/L, CH-2/R (phone jack) × 1 each −60 dB, 3 k ohms, unbalanced
Outputs	AUDIO LINE OUT CH-1/L, CH-2/R (XLR 3-pin male) × 1 each +4 dBm (at 600 ohm load), balanced MONITOR AUDIO (phono jack) × 1 −5 dB (at 47 k ohm load) MONITOR TV (8 pin) × 1 HEADPHONES (stereo phone jack) For 8-ohm headphones Level adjustable (from −26 to −46 dB)
Frequency response	AFM: 30 to 15,000 Hz PCM: 20 to 15000 Hz (both audio channel 1 and 2)
Dynamic range	PCM: more than 80 dB
Recording level control	Manual or limiter selectable
PCM sampling frequency	31.5 kHz

Other functions

Pause	A still picture is obtained with long pause function
Search	Still, 1/30 to 15 times normal speed in forward direction, 1/30 to 13 times normal speed in reverse direction
Sync system	Automatic switching between internal and external
Dropout compensator	Built-in

Tape transport

Tape speed	20.05 mm/sec.
Recording and playback time	Approx. 90 minutes (in SP mode)
Fast forward and rewind time	Within 3 minutes (with E5-90/P5-90)
Tape compatibility	8 mm video cassette tapes
Usable tapes	E5-HME, P5-MP series and equivalent

General

Power requirements	Rated voltage: 220 to 240 V AC, 50/60 Hz Operating voltage: 198 to 264 V AC, 48 to 64 Hz
Power consumption	55 W
Operating position	Horizontal (up to 20 degrees)
Storage temperature	−20°C to +60°C (−4°F to +140°F)
Operating temperature	5°C to 40°C (41°F to 104°F)
Dimensions	424 × 146.5 × 452 mm (w/h/d) (16 3/4 × 5 7/8 × 17 7/8 inches) not including projecting parts and controls
Weight	Approx. 14 kg (30 lb 14 oz)
Supplied accessories	AC power cord (1) Operating instructions (1)

Design and specifications are subject to change without notice.

Recommended video equipment and accessories

Editing Control Unit RM-450CE, RM-440 (when the BKU-703A installed)
Color Video Monitor Sony CVM and PVM series
Color Video Camera Sony DXC series
33P Editing Interface BKU-703A
Remote Control Unit RM-500, RM-580 (when the BKU-703A installed)
Cleaning Cassette V8-25CLH
Remote Control Cable RCC-5G (9-pin), RCC-5F (33-pin)
Dubbing Cable VDC-5 (5 m)
Monitor Connecting Cable VMC-3P (3 m), VMC-5P (5 m), VMC-10P (10 m)
Multi Remote Control Unit RM-555 (when the BKU-703A installed)
Video and Audio Switcher BVS-500
VTR Selector RM-V5
Rack Mount Kit RMM-980
S-VIDEO connecting cable YC-30V (3 m)